THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVIII. SATURDAY, MAY 23, 1891. No. 21.

ORIGINAL ARTICLES.

NAPHTHALIN IN TYPHOID FEVER;

Based on Its Employment in One Hundred Consecutive Cases.

BY L. WOLFF, M.D.,

PHYSICIAN TO THE GERMAN HOSPITAL OF PHILADELPHIA; DEMONSTRATOR OF CHEMISTRY, JEFFERSON MEDICAL COLLEGE, ETC.

WITH the recognition of the bacterial origin of typhoid fever and the seat of the characteristic microörganisms in the glandular apparatus of the lower part of the ileum, the endeavor to combat bacterial growth at its peculiar location and thereby to prevent the formation by it of the toxic agents which give rise to the typical symptoms of that disease, intestinal antisepsis soon became a factor in the therapeusis of this affection.

Carbolic acid, thymol, iodine, mercuric and mercurous chlorides and iodides were employed for this purpose, and, with the exception of calomel, were soon relegated to the oblivion they seemed to deserve. That calomel alone remained and proved its worth in practical application, is probably due to its insolubility and its gradual conversion only in the lower part of the small intestines, where it no doubt forms antiseptic compounds. It appears, therefore, that the methods of intestinal antisepsis were not so much at fault as the selection of the proper antiseptics. Carbolic acid, iodine, thymol, naphthol, corrosive sublimate, etc., are evidently taken up in the upper part of the digestive tract, or early in the digestive act converted into compounds which promptly find their way into the absorbents. In the extreme dilutions in which they can circulate in the blood, even though they were not also promptly eliminated, they cannot possibly exert a sterilizing action on the soil of the bacterial growth. Deducing from the undoubtedly favorable action of calomel in enteric fever, the choice for an intestinal antiseptic should fall upon one that is not readily soluble nor taken up by the absorbents, until it had reached that part of the intestines which is the seat of the etiological microbe. It might be asked, Why not employ calomel, if its action has proven so beneficial? To which must be responded, that its continued use for any length of time is certainly impossible, both on account of its irritant action on the intestinal mucous surfaces, as well as the early-appearing constitutional symptoms, which must at once contra-indicate its employment.

Rossbach, of Jena, some time ago (*Berliner klin. Wochenschrift*, 1884, No. 42) recommended naphthalin as deserving of trial as a suitable intestinal antiseptic agent in typhoid fever, arguing in its favor the good results obtained with it in different enteric affections, both catarrhal and ulcerative. He claimed for it that by its use he was enabled to disinfect the enteric intestinal canal, and that the fæces under its use passed perfectly odorless, or with only a predominating odor of naphthalin. He further claimed for it insolubility in water, acids, and alkalies, also strong antiseptic powers; and that while toxic in its effect upon insects, it certainly did not exert, even in large doses, toxic or deleterious action upon man. Also, that it was almost always readily tolerated by the stomach, not disturbing the appetite or digestion, and that albumin never appeared in the urine after its use. The same author quotes also the statistics of a number of cases of typhoid fever which had been treated with naphthalin and which had terminated abortively inside of two weeks, while in the late cases it had exerted no marked influence over the disease. In another paper on the same subject (*Berliner klin. Wochenschrift*, 1885, No. 14) he treats further of the action of naphthalin and its untoward effects, and attributes the latter largely to the use of the impure drug or to the idiosyncrasy of the patient. Some of the unpleasant results were strangury, and even præputial œdema observed in two tuberculous patients. He already points out the dark coloration of the urine under its use, and thereby admits the elimination of some of it by the kidneys. He claims that the rare untoward symptoms were by far outweighed by the decided beneficial results obtained by its use. In his remarks on this subject at the Congress for Internal Medicine at Berlin in 1884, Rossbach also states that if taken internally it was to some extent eliminated with the urine, either as naphthalin or converted into naphthol, which Baumann and Herter declared was not the case in dogs to which had been given five grammes of naphthalin. They held, therefore, that it must pass off as naphthalin in the aqueous vapors, but did not explain the condition of the organic sulphates under its use. It was stated by Rossbach that the urine of patients taking naphthalin was preserved from decomposition for weeks; also, that Schlescher had obtained a naphthol reaction in such urine.

E. Sehrwald, of Jena, in an exhaustive paper on

"Naphthalin in Typhoid Fever" (*Berl. klin. Wochenschrift*, 1889, No. 19), from experiments made in the laboratory of the medical clinic of Professor Rossbach, reviews the uses and action of naphthalin, and especially its effect on bacterial life in artificial cultures. He inclines to the view that naphthalin possesses inhibitory action on the development of microörganisms, and though he admits that at ordinary temperature this is very little, he claims to prove that it is increased by greater surface contact, such as might be produced by shaking and peristaltic action; also, that at the temperature of the body its action on the microörganisms is much more intensive, and that it acts most probably in its gaseous state by inhibiting the growth and is destructive to the life of the germs. It is therefore more energetic on aerobic bacteria and those propagating on solid soil than on the microörganisms vegetating in fluids. He seeks to explain in two ways the beneficial results from naphthalin as an intestinal antiseptic, by the constant peristalsis and the elevated temperature, which causes the fluids thereof to come constantly in contact with the gaseous naphthalin so generated. He states that while the microbes of the fæcal masses are by this antiseptic reduced to one-half without the body, they are reduced to one-third or one-fourth in it, and after evacuation very soon again reach the former proportion. A most significant deduction made by Sehrwald is that naphthalin acts even more forcibly on the typhoid bacilli, reducing them to one-tenth their quantity, and reducing them still further when they have been already reduced by the exhibition of calomel. On account of the mixed character of the infection of typhoid fever and the more energetic manner in which naphthalin acts on the bacilli thereof, and the control of calomel over some of the other bacteria of that disease, he recommends the joint administration of the two drugs in typhoid fever.

Notwithstanding the painstaking experiments of Dr. Sehrwald and his logical deductions, the weak antiseptic powers of naphthalin appear to give no great assurance as to the probable results to be obtained by its use in enteric fever. Having for some time employed naphthalin in the typhoid fever wards of the German Hospital of Philadelphia, and having become satisfied as to its decided beneficial influence on the course of this disease, I have made a number of researches at the laboratory of the Jefferson Medical College as to its action and conversion in the digestive tract. It is hardly to be supposed that we can look for its action as being germicidal when it is at best even a very weak antiseptic. That it is quite insoluble in the fluids of the body would be another objection against its use as an antiseptic. We cannot suppose that it should prove directly antagonistic to bacterial life, but we may infer that, if it were soluble, it should permeate the tissues and transform them into unsuitable soil for microbic propagation. From Dr. Sehrwald's experiments we would look for the active typhoid bacilli in the contents of the intestines, rather than in the solitary glands and the Peyer's patches of the ileum. What we may look for in the intestinal contents are the soluble products of the pathogenic microbes over which naphthalin or any other antiseptic can have no control; whereas the factors thereof are nested in their glandular beds, propagating there at the expense of the culture soil they offer, and secreting in their destructive process the toxin which gives rise to its pathognomonic symptoms.

It seems to me that an intestinal antiseptic must be intended rather to affect the soil than the bacterium directly, as probably no chemical agent could do this in non-toxic doses. To such an agent naphthalin must be converted before it can produce a local antisepsis and be absorbed. It has been stated by Rossbach that he had given the napthalin in doses ranging from one and one-half grains to as much as seventy-five grains per day. He urges the larger doses because only with them does the naphthalin become apparent in the fæces. Why should the smaller doses not be eliminated by the bowels, and what becomes of them? To determine this I made, jointly with my assistant, Dr. M. V. Ball, a series of experiments, in which we commenced taking naphthalin in smaller doses, and gradually increasing it until we could demonstrate its presence in the stools in its pure state. We made also control experiments with the stools of typhoid patients, and found that naphthalin in doses not exceeding five grains every four hours would not appear in the fæces. We further demonstrated that in the five-grain doses the odor of naphthalin was not apparent in the exhalations of the lungs or skin, but that derivatives of naphthalin could be promptly and continuously detected in the urine. The question of the elimination of the naphthalin derivatives from the body has been gone over so extensively, and the tests are so purely chemical, that I will omit them, as they have been published elsewhere by my assistant, Dr. Ball (Prize Essay, Jefferson Medical College, 1889). I will only state that we invariably found naphthol-sulphuric acid, or rather napthol-sulphurates, in the urine. With ferric chloride they gave a red color, turning to brown, while with diazobenzol-sulphurate of sodium a beautiful red color promptly appeared. From these experiments it may be inferred that in five-grain doses or less all the ingested naphthalin leaves the body in the urine (excepting the probably small quantity escaping in vapor form). This deduction naturally leads to the question of how this conversion of naphthalin can

and does take place? It is a well-known fact that in the small intestines there is constantly found and produced more or less hydrogen peroxide, and thence it passes into the blood and even into the urine. It is also a fact that naphthalin forms directly with hydrogen peroxide a hydrate known as naphthol, which, according to its relative position, may be either of the α or β variety, and, furthermore, that the product of naphthalin is a very powerful antiseptic. It may be assumed that it is the naphthol locally produced which exerts the inhibiting power over microbic life, while the value of naphthalin rests in its being insoluble and being converted only at or near the site of the infection. That it is thence absorbed and eliminated as a sulpho-compound might lead to the question why naphthol itself should not be at once administered. This can be answered to the effect that as naphthol is soluble (about 1 to 1000), it will no doubt be absorbed in the upper portion of the digestive tract, probably little, if any, reaching the lower part of the ileum.

I have made the foregoing experiments and researches to justify my continuance with the treatment of my typhoid patients by this remedy. Before proceeding with my own clinical observations I will quote from the inaugural essay of Dr. Ludwig Wilhelm Goetze, published in the *Zeitschrift für klinische Medicin*, Berlin, 1885, in which he reports thirty-five cases of typhoid fever treated with naphthalin, of which three terminated abortively in three days, ten within ten days, and four within two and one-half weeks; a total of seventeen cases, or 50 per cent of the total number so treated. Of the thirty-five cases three died, so that the total mortality in this series would have amounted to 8.5 per cent. Of these the reporter claims that two deaths were not to be attributed to the typhoid condition, but to severe complications, leaving a mortality of 2.8 per cent. in an epidemic which was considered of a severe type.

My service in the medical wards of the German Hospital during the last three years brought to my observation a rather larger number of cases of typhoid fever than is usually met with in medical practice. While it is well known that some typhoid epidemics assume a more serious character than others, and that the death-rates vary as a consequence, irrespective of any treatment, I selected for my observations on intestinal antisepsis with naphthalin, one of the more severe, if not the most severe epidemic we had experienced for some years. The cases so treated were selected, but received the same medication, as follows: On admission, calomel with soda was administered in grain doses each three hours for six hours, or until its laxative effect forbade its further use. This was immediately followed by gelatin capsules containing five grains each of purified and finely-powdered naphthalin every four hours, alternated only with a few drops of dilute hydrochloric acid. No other medication was permitted, excepting chemical antipyretics and cold sponging for hyperpyrexia. The diet consisted of milk, alternating with meat broths containing raw eggs; stimulants were administered as required.

I submit herewith a *résumé* of one hundred consecutive cases treated in this manner. An analysis of this series of cases shows the following results: Of the one hundred patients fifty-six were males and forty-four females; their average age was 24.7 years; the mean duration of the febrile period was 24.4 days: this may seem large, but when we take into consideration that some had long sieges of fever and others had two or three relapses, it explains the reason for such a protracted average fever period. A notable fact is that in the one hundred patients so treated sixteen cases ran an abortive course, *i. e.*, they defervesced before the end of the second week. Only three of the patients had intestinal hæmorrhage, which, however, in two of the cases occurred shortly after they were transferred to me and subjected to naphthalin treatment. The total mortality was 10 per cent. Two cases were brought in comatose and never rallied, and died within three days after admission. Of the complications resulting in death was one with facial erysipelas, one with glosso-pharyngeal paralysis, one with acute pulmonary phthisis, one from heart failure in consequence of valvular heart lesion. Of the other four remaining fatal cases, two died respectively within four and five days after admission, never having responded to treatment. I may, from the foregoing, fairly assume that the mortality of these cases under naphthalin treatment did not exceed 2 per cent. It is not probable that the total death-rate from typhoid fever in general hospitals will ever be reduced much below 10 per cent., as severe cases admitted late in the disease, or with complications which no longer admit of treatment at their homes, will under any treatment prove more or less fatal.

To understand the value of my figures here given I must refer to the death-rate of typhoid fever at the German Hospital of Philadelphia for the five years prior to the epidemic during which I made the observations the results of which I have herein submitted. According to the statistics of this hospital the death-rate from typhoid fever in 1884 was 23.4 per cent.; in 1885, 11.4 per cent.; in 1886, 20.4 per cent.; in 1887, 17.4 per cent.; and in 1888 it was 13.2 per cent.; while the one hundred cases which I have here reported followed in 1889 with a total death-rate of 10 per cent. As a comparison made of the death-rates under various

treatments I can quote no better statistics than those of Liebermeister, in Basle, which he gives as follows:

On the indifferent plan, 27.3 per cent.; on incomplete antipyretic treatment, 16.2 per cent.; on complete antipyretic treatment, 10.2 per cent.; no specific treatment, 28.7 per cent.; calomel treatment, 12.4 per cent.; iodine treatment, 12.9 per cent.

As a result of my observations I would also state that naphthalin has no direct influence on the fever temperature; it is often surprising, however, how soon after its continued administration a lysis will take place and a normal temperature will be reached. That this is due to the inhibiting effect of the drug on the morbid process and its etiological elements may be inferred from the fact that if in such cases the medication be discontinued directly on defervescence, a renewal of the febrile process will generally take place. It was at first a matter of some surprise that the relapses were so frequent, there being nine cases showing renewal of fever and some of them had even two and three relapses. After that, I continued the naphthalin for some time after complete defervescence, and the frequency of relapses was greatly diminished. In only one of the cases did I find continued nausea and persistent vomiting, necessitating an interruption in the naphthalin treatment, which, however, was resumed subquently without further trouble. One of the favorable results of naphthalin treatment is the control it exerts over the excessive and exhausting diarrhœa. After its continued use for some time it may even be found necessary to administer laxatives or exhibit laxative enemata to overcome resulting constipation. There seems to be no repugnance on the part of the patient against the drug, unless it is administered in suspension instead of in gelatin capsules. The appetite is in no manner impaired by it, and I have had no occasion to observe any irritation of the uropoëtic apparatus with the purified naphthalin I invariably employed. I have carefully watched its effect on the heart, but found that it is in no way impaired or depressed by it.

In conclusion, I may sum up my deductions as follows: That the treatment of typhoid fever should always be under two heads—one for the infection and the other for the toxæmia resulting therefrom. There seems to me no room for doubt that at the onset of the disease the administration of naphthalin may inhibit the development of the pathogenic microbes to such an extent that the fever itself will run an abortive course. Further, that at any period of the disease we may restrict the growth of the etiological factors in a measure, that an over-production of the chemical toxins may be prevented, and thus the fever run a mild course. This is possible, in my estimation, only with chemical agencies which, innocent in their immediate action on the organism, will be chemically altered in the lower part of the digestive tract, and there exert their antiseptic action on the soil of the pathogenic microörganisms. Of these agencies naphthalin and calomel are the principal representatives, and of the two, naphthalin must have the preference for its non-toxic character. Whether naphthol directly administered in keratin-coated pills be preferable, I am not prepared to state, although I know that, if ingested in suitable quantities for intestinal antisepsis, it produces local irritation, reflex vomiting, and diarrhœa. The gradual but continued development of naphthol from naphthalin *in situ* seems more calculated to produce intestinal antisepsis without the accompanying irritation of masses of naphthol.

Although I feel justified from the foregoing in recommending the use of naphthalin for the treatment of the specific infection of typhoid fever, I do not wish it to be understood that I recommend it as the sole treatment of this disease. No chemical agent so far known can destroy the characteristic toxins without also destroying life, and naphthalin can in no manner influence the already absorbed typhotoxin nor combat the symptoms it produces. For the toxæmia there is no specific remedy save speedy elimination and the stimulation of the vital organs against it. Though not within the province of my paper, I would say that, in my opinion, this is best obtained by cold baths; but I should think myself as much remiss to depend upon combating simply the specific poison in the body without attempting to limit its production, as I would be by attending to intestinal antisepsis alone without regard to the dangerous symptoms which the absorbed poison has already produced.

ACUTE DELIRIUM: ITS ETIOLOGY, PATHOLOGY, AND CLINICAL FEATURES, AS STUDIED AMONG THE INSANE.

BY W. P. SPRATLING, M.D.,
OF MORRIS PLAINS, NEW JERSEY.
FIRST ASSISTANT PHYSICIAN NEW JERSEY STATE ASYLUM FOR INSANE; MEMBER OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

BEFORE proceeding to a more general consideration of the features embodied in acute delirium, it may be wise to offer an explanatory note bearing upon the title of this paper. We would call attention to the fact that when we say acute delirium, as studied among the insane, inference naturally draws one to conclude that the cases studied were actually insane. That they were so stamped by reason of a legally qualified commitment, which placed them for treatment in a hospital for the insane, is a fact beyond dispute. But this alone, and I say it with all respect to those charged with the

examination and commitment of such cases, does not make them insane in the true sense of the word, and in the sense that insanity should be strictly accepted and rigorously held to. We are getting too prone to magnify and overestimate mild and comparatively harmless deviations in the mental operations of an individual from what we conceive that person's normal psychological standard to be. We do not claim that the "curve of health," lately discovered by Dr. Oliver Wendell Holmes, can be so deflected or extended as to include in the normal variations of man's physical welfare such a disease as acute delirium. It would be worse than folly to go that far. We do, however, venture to assert that pure and simple cases of acute delirium, characterized by their usual symptoms, abrupt in invasion, destructive in tendency, and evincing the many profound physical manifestations of disturbed organic life, should not be held to constitute a true form of insanity. We submit as a matter of fact that the objective symptoms in cases of acute delirium vastly outweigh the subjective. While the objective symptoms are sufficient to fill out a long list, the subjective ones are confined to a low delirium in nearly all cases. This low, unceasing, monotonous delirium should not be, in itself alone, sufficient to constitute insanity. Typhoid and many other febrile conditions are characterized by a like delirium, and yet the stigma of insanity, so considered by the ignorant, is not forced to rest on such cases. Acute delirium, with its concomitant symptoms, often goes under different names, of which acute delirious mania constitutes one of the most frequent designations employed by alienists when such cases are received into hospitals for the insane.

To the student of diseases of the human mind, the condition of acute delirium is especially interesting. A fair percentage of acute cases admitted into hospitals for the insane is composed of such. It is also known that the rate of mortality among this class of cases is high. We have often been astonished to see how quickly a strong, vigorous, and hearty individual, whose disease may only have existed twenty-four or forty-eight hours prior to admission to the hospital, becomes within a week or ten days a victim to the ravaging powers of this disease. All, of course, do not die; many recover; others lapse into a chronic condition in which they evince mental symptoms pathognomonic of no distinctive type of insanity, but sooner or later pass into secondary or terminal dementia. In THE MEDICAL NEWS of January 31, 1891, Dr. James Hendrie Lloyd invites us to a new field of reflection concerning the causative elements of acute delirium. He is inclined to the opinion that the disease is due to an infectious process or the action of some irritant poison. In a proportion of cases we fully agree with him, and even do so more readily in those cases in which we can directly detect a culpable source of infection, as, for example, in puerperal cases; for here we have no embarrassment, as a rule, in ascribing to the proper cause any manifestations of delirium or erratic mental action, should it occur within the first month, or even later, after childbirth. We also know that certain exopathic poisons, in gaseous or microscopic form, when taken into the system, produce distressing bodily derangements, attended in some instances with marked delirium. Dr. John B. Chapin, in the same issue of THE MEDICAL NEWS, calls attention to the fact that sewer-gas emanations from old privy vaults and other impure exhalations give rise to bodily and mental symptoms, some of which are characterized by acute delirium. Such agencies constitute exopathic chemical poisons, and it is generally quite easy to establish, in such instances, the causal relationship between the disease and its proximate cause. On the other hand, we frequently encounter typical cases of acute delirium, the causes of which we find it impossible to determine. In many of these cases we can readily exclude, so far as a careful and exhaustive inquiry will enable us to do, every possible cause, or source of exopathic infection, and so we are left to assume that the cause for the disease comes from one or the other of the following sources: either from the action of endopathic chemical causes, which arise either *sui generis*, or have their origin as the result of new compounds formed within the economy, or from causes purely psychological. The psychological causes of morbid mentality have long been recognized. Credit has always been given to excessive exercise of the mental faculties when deeply disturbed by grief, shock, or remorse, for producing unwholesome deviation of mental action and oftentimes fixed insanities. How mental action deranges itself, or the source from whence it comes, is as interesting a question as "Why does not the stomach digest itself?" If we could once establish the essential method of production of mind, or its mode of origin from the highest types of the bio-plastic elements of the brain, or if we could understand and demonstrate the probable or true chemical metabolism that takes place in the cells of nervous matter when mental force is being evolved, then we would be in a far better position to formulate some basic principle upon which diseased mental action in general goes on. We are inclined to the opinion, though our conceptions may be totally erroneous, that the chemical constituents of nerve-tissue suffer some deleterious chemical change when that nerve, or nervous tract, is required to transmit currents of thought, so to speak, which are excessively intense,

imperative, and morbid in character. We furthermore believe that the duration of application of these intense and essentially poisonous impressions, determines whether the mental symptoms that supervene shall be lasting in character, or whether suitable remedial agencies, or the beneficent action of that great healer, Time, will suffice to eradicate them. From among the number of cases of acute delirium that have been admitted to this hospital during the past four years I have selected the following five. These five cases embrace the operations of three distinct causes—distinct so far as the source from which the causes *a priori* arose. The first was evidently due to an infection derived from without, the delirium in this case following an attack of la grippe. The second was due to puerperal sepsis, in conjunction with intense psychological disturbance. The third was purely psychological. The fourth originated in consequence of a specific infection, operating conjointly with religious excitement; while the fifth is shrouded in much doubt as to its real cause. It occurred in a woman six months after the birth of her child, the mother being in the meantime in good health, both mentally and physically.

CASE I.—J. H., a native-born American, thirty-five years of age, married, and a laborer by occupation. His illness began on February 17, 1890, with an attack of la grippe, at that time epidemic in the country. The attack began two weeks before his admission to the hospital, and he had been delirious four days when admitted; delirium set in on the tenth day of the disease. Prior to his admission his delirium was quite active, being attended by a good deal of motor excitement. Soon after admission the character of his actions underwent a material change; he refused food and drink; his tongue became dry, brown, fissured, and hard, and sordes covered the teeth; breath very offensive; eyes restless and wavering in expression; the lines of the face drawn and prominent. It was impossible to fix his attention for a moment; he was never quiet, tossing to and fro on the bed, constantly muttering unintelligible sounds. He was put upon supporting and stimulating treatment, which had to be carried out entirely by artificial means, by the use of the stomach-tube and rectal injections. He gradually failed, and died on the eighth day after his admission to the hospital. An autopsy held some hours after death revealed no special pathological changes. Along the median line of the dura a number of hæmorrhagic spots were noted, the dura being somewhat thickened in the same locality, and slightly adherent just here to the pia. The vessels of both the dura and pia were greatly congested. The puncta vasculosa throughout were plainly marked. The brain weighed forty-eight ounces, and its substance was in good condition.

CASE II.—C. McC., a young married female, twenty-six years of age, a native of Ireland, the mother of three children, and a silk-finisher by occupation. Prior to this illness patient had always enjoyed robust health; she had no trouble, either during or after any of her child-bearing periods, dependent upon this condition. During the two and a half weeks prior to her admission to the hospital she was a constant attendant at mission meetings held in the Catholic church of which she was a member. She attended these meetings closely, and appeared deeply interested in them. The first evidence of mental derangement was noticed one evening upon her return from the service, when she was "excited" and "talked strangely." The next morning she appeared normal, and went about her household duties as usual until 9 o'clock, when the first marked outbreak occurred. She raved about "Christ and crucifixion," and continued in this excited, delirious condition for four days, when she was admitted to the hospital. Shortly after admission she became less active in speech and action. The delirium continued, and was characterized by all its usual symptoms. She persistently refused food and medicine, talked incessantly about religious matters, and never slept unless under the influence of some hypnotic. There was a slight elevation of temperature, the skin was hot and dry, the lips and tongue deeply furrowed with brownish-colored fissures, sordes covered the teeth, and her breath was very offensive. Her face wore a restless, apprehensive, and, at times, a pleading expression. Emaciation rapidly appeared, and she continued to fail, and died from exhaustion on the sixteenth day after the beginning of her disease. An autopsy held ten hours after death showed intense general congestion, involving both conjunctivæ, the scalp, the membranes covering the brain, and all the internal organs. The pia and arachnoid were intensely congested, the former being adherent to the convolutions of the posterior frontal and postero-parietal regions. This adherence was most marked along the median fissure. The vessels, cord, medulla, pons, and corpora quadrigemina were also congested. Brain-substance of normal consistence.

CASE III.—The one due to purely psychological causes was that of J. A. T., a young native-born American, twenty-three years of age, and a stenographer by occupation. He had been ill four weeks when admitted to the hospital suffering from a pronounced type of melancholia. He was brought here on account of his trouble suddenly taking an unfavorable turn. He became much worse twenty-four hours after admission, and rapidly passed into a condition of acute delirium. The cause of his primary mental depression, as given, was that he had wronged a young woman, and thought he would be forced to marry her. Prior to this misdeed he had never had any mental trouble whatever. About three years before this he had an attack of typhoid fever, and experienced the usual delirium. From the beginning of the delirium after his reception here he steadily failed. All physical powers seemed to actually melt away. Motor and mental activity seemed to go on under the highest pitch of intensity. His fancy was most active. He dreaded being captured and tried for a wrong, and constantly exercised his motive powers to flee from his environments. His

efforts in this direction soon ceased on account of complete physical exhaustion. He was put upon a stimulating and nutritious diet, administered every two hours, and choral was used in twenty-grain doses to overcome restlessness and insomnia. Later on, heart stimulants were called for. All treatment, however, proved futile, and he died on the eighth day after his admission into the hospital. An autopsy was not permitted.

CASE IV.—J. D. C., a man, twenty-eight years of age, native-born American, married, an engine-driver by occupation. The cause of illness in this case was held to have been an infection derived from without, operating conjointly with a psychological disturbance, springing from religious excitement. "Malaria" was given as the agent of infection, from the fact that the patient worked in a low-lying, swampy district, known to be miasmatic. Religious excitement, consequent upon his attending a "revival," was also regarded as semi-responsible for his subsequent delirium. When admitted here, on the 21st of last January, he had been ill for a week. The symptoms at that time constituted the more ordinary signs of simple melancholia. Two days after admission his condition greatly changed. He suddenly became very aggressive toward other patients, went dancing and surging around the ward, and evinced some hallucinations of sight and hearing. Four days later this condition terminated as suddenly as it began, and he passed into a state of active delirium. The following are some notes of the case taken from the house records:

February 5. Delirium active; forcible in his bodily movements; tries to escape from the room whenever the door is open; mutters constantly, giving expression to semi-intelligible words bearing upon his previous life.

7th. No improvement; appetite very good; is given milk, whiskey, and eggs in combination every two hours. Eyes restless and apprehensive in expression; tongue dark-brown in color, dry, and deeply fissured; lips parched, cracked, and swollen; slight elevation of temperature; delirium continues.

9th. Improving; less restless; takes food better; restraint unnecessary; sordes disappearing from the teeth; tongue more moist and delirium subsiding; takes plenty of food.

15th. Able to be up and around the ward; all sensory and motor excitement gone; has fallen into a sullen, fixed mental state, that seems liable to become chronic. He will not speak, and has a positive aversion to being disturbed for any purpose whatever. Manifests a vicious tendency at times toward other patients.

He is still here, in fine physical condition, but I have little hope of the final restoration of his mental faculties.

While his delirium was just as active, and the objective symptoms just as prominent, as in some of the preceding cases, I am inclined to attribute the cause of his restoration, as far as it has progressed, to the great amount of nourishment he was forced to take, to the mixed character of the cause of his illness, and to his remarkable powers of physical endurance.

CASE V.—D. B., a married female, twenty-five years of age. She has one child, which was nearly six months old at the time of the mother's admission here. This patient's mother was insane, though nothing is known of the character of her insanity. The factor of heredity, combined with the puerperal state, and the hard work of the mother as sole attendant of her child, can doubtless be laid down as the causes responsible for the present acute attack. She was brought here on February 19th last, five days after the beginning of the disease. General excitement marked the inception of the attack. Shortly after admission she manifested symptoms of acute delirium, though not of an active type. Motor symptoms predominated. She could not be kept in bed; would get up and walk aimlessly about the ward, muttering incessantly to herself. Her attention could not be fixed. Her face, tongue, eyes, and lips, in fact, every feature, bore the symptoms of acute delirium. She would not eat, and on feeding her with the stomach-tube the extreme sensitiveness of the stomach, probably through reflex irritation, caused everything to be promptly rejected. She was then fed by nutritious enemata. A copious injection of warm water was first given, and after this had passed away eight ounces of milk, whiskey, and eggs were given three times daily. She was fed in this manner for about ten days. Insomnia for awhile was controlled by morphia, hypodermically; but at the end of a week she slept without it. Immediately she began to improve, and has continued to do so since. At present she has some timid delusions, if I may so express them. By this I mean delusions about which she is apparently in doubt as to whether she should or should not speak. I hope these will soon fade entirely away.

STRICTURE OF THE RECTUM, WITH THE REPORT OF A CASE.[1]

BY S. GANT, M.D.,
OF KANSAS CITY, MO.,
LECTURER ON PHYSIOLOGY IN THE UNIVERSITY MEDICAL COLLEGE OF KANSAS CITY; LATE HOUSE SURGEON OF NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

STRICTURE of the rectum may be congenital or acquired. The congenital form is usually described under the title of malformation, and will not be considered in this paper, which is intended as a study of the acquired forms of stricture. These strictures may be classified as follows: 1, Those due to pressure from outside the bowels; 2, spasmodic; 3, non-venereal; 4, venereal; and 5, cancerous. A tumor of any kind in the pelvis will not infrequently

[1] Read before the Medical Society of the Missouri Valley, Omaha, Neb., March, 1891.

so press upon the rectum as to obstruct its calibre. There has been a great deal of discussion by the authorities as to whether we ever have a spasmodic stricture. The majority of them, however, have great doubt as to its existence, especially if the constriction is above the sphincters. A stricture which disappears on anæsthetizing the patient is a so-called spasmodic stricture. Non-venereal strictures are divided into the dysenteric, inflammatory, and traumatic. Dysenteric ulceration is one of the most frequent causes of stricture, which, when it is extensive, sometimes results in multiple strictures. A stricture may be the result of proctitis, acute or chronic, when sufficiently severe to cause changes to take place in the coats of the rectum. A simple traumatism may lead to the same result, either by causing ulceration and cicatrization, or by exciting a chronic inflammation in the sub-mucous and connective tissue. The more prominent kinds of traumatism which may result in a stricture are operations upon hæmorrhoids, foreign bodies, applications of strong acids, kicks and falls, some surgical operations, and injury produced by the head of a fœtus during childbirth. There is another form of stricture which may result from a thickening of the folds of mucous membrane which are normally present.

Venereal strictures may be divided into the cicatricial and neoplastic. Venereal ulcerations which by subsequent cicatrization are capable of producing stricture are the chancroid and later syphilitic ulcers. The chancre and mucous patch may be excluded, since their influence in causing stricture is rather a matter of surmise than of proof. There is a form of venereal stricture which does not undergo ulceration primarily—this may be called neoplastic. In this class we find the gummata, the ano-rectal syphiloma, and a later manifestation, in which we have a deposit of new material in the rectal wall as a result of the inflammatory condition.

In studying the pathological anatomy of stricture there are several points to be observed, for changes will be found not only in the stricture itself, but above and below it, and in the surrounding parts. The mucous membrane at the point of constriction will usually be found destroyed, and the connective tissue increased in quantity, thus increasing the thickness of the rectal wall. Later, the mucous membrane will show ulceration in all stages, from a simple congestion in some points to a complete destruction in others, due probably to retained fæcal matter. The ulceration may extend up and down the bowel, or cause a perforation.

There is a low form of peritonitis which frequently accompanies stricture. The rectum below the stricture seldom remains unchanged. Hæmorrhoids, vegetations, excoriations, fistulæ, and cutaneous tags of greater or less size usually follow in close proximity as a result of the discharge from the disease above.

Stricture proper is not met with so frequently as is supposed. The fact that a patient complains of constipation, or passes ribbon-like stools, is in nowise a clear indication of stricture, for we have such symptoms from ulcers of the rectum and sometimes from an irritable sphincter. Stricture is more common in the female than in the male. Bryant found, in 48 consecutive cases, that 32 were in women. Of this number 20 were under thirty years of age, 15 being women, who were mostly, if not all, syphilitic. Twenty-two were over forty years old, one-half being men, and most of them of a cancerous nature.

Allingham in his work reports seventy cases. Of this number sixty were women. Out of the seventy, thirty-five had undeniable syphilis, while five had symptoms (but not decisive) of having contracted the disease, which leaves thirty who had undoubtedly never contracted syphilis. He found that about the same proportion of males had syphilis. From these statistics it can readily be seen that stricture is very frequently a result of syphilis.

One of the first things to direct our attention to stricture is a continual uneasiness about the rectum, which is usually followed by pain attending the passages; great efforts at stool are attended with unsatisfactory results; constipation is present in the early, and diarrhœa in the later stages, after ulceration has commenced; lumpy stools, containing pus, blood, and mucus, are passed; there is great straining at stool, with a sensation as if the bowel had not emptied itself; the stools are tape or ribbon-like, and as the stricture becomes smaller we have complete stoppage and dyspeptic symptoms. A stricture may or may not obstruct the entire calibre of the rectum. The most extensive disease is found in cases of syphilitic deposits, syphilitic sclerosis, or dysentery. In making the diagnosis, first get a complete personal and family history; follow this up by getting the subjective symptoms; after this comes the digital examination, by which you will nearly always detect the stricture, for most of these troubles are located in the lower part of the rectum. If the stricture is high up we have different symptoms. The patient will complain of pain in the abdomen, groin, and down the limbs, and obstinate constipation, with occasional diarrhœa. A stricture in this locality is very difficult to diagnose, and it must be looked for with great care, for I distinctly remember perforating the rectum while trying to make a diagnosis with a rubber bougie. The case, fortunately for me, did not die. If bougies are used, the flexible, soft rubber one should be chosen, and then used with *great caution*. I prefer a long, soft rubber tube to the bougie. Dr.

Kelsey says that he knows of no other way than this, and by exploratory laparotomy, in which a stricture in this locality which cannot be felt by external manipulation can be certainly diagnosed.

The prognosis in stricture is unfavorable so far as a cure is concerned. All we can hope to do in a great many cases is to prolong life by keeping the stricture in such a condition that the patient may have a reasonably comfortable stool.

The treatment of stricture should be local, constitutional, medicinal, and operative. The first question to determine is, Has the patient syphilis or not? If you have reason to believe that your patient has syphilis, put him on the mixed treatment at once; yet you should be careful, and not use the iodide of potasium and mercury indiscriminately. Should you do this it is possible that you will make as many mistakes as those who think all strictures are of a cancerous nature, and direct their treatment accordingly. Cicatricial tissue, though the result of specific disease, is beyond the reach of specific treatment, but where you see the case in the early stage much improvement will be gained by a thorough course of mixed treatment, by which means a gummatous deposit or a syphilitic sclerosis may be checked. Mercury, in the form of ointment, may be used, but it will be found very irritating if there be much ulceration. There are many ways in which the comfort of your patient may be increased without recourse to operative treatment, and these should not be overlooked in the surgeon's eagerness to operate. Careful attention to the diet is needed, which, so far as possible, in conjunction with other liquid and semi-solid food, should be milk in large quantities. The bowels should move at least once a day. The mineral waters, Rochelle or Glauber's salts, will be sufficient in most cases to cause an action. Purgatives are contra-indicated because of the straining and tenesmus which accompanies their action. The general health should be looked after, and cod-liver oil used if indicated. The most important thing, however, is rest in the recumbent position, and to allow your patient to walk as little as possible. When the ulceration is deep and contraction has commenced, you should be guarded about the prognosis; yet a good deal of hope may be instilled into your patients if they will give themselves up to your treatment for a greater or less length of time. If they are indiscreet they may undo in a day what you have gained in a month. One of the best ways of applying medication to a stricture is by means of the pile-pipe, which has a large base, gradually tapering toward the apex, and perforated with numerous holes. You fill the reservoir in the base of the tube with ointment, and then by turning the screw in the base force the remedy out on all sides equally. Allingham's favorite prescription is the following:

℞.—Bismuthi subnit. . . . . ʒj.
Hydrarg. subchlorid. . . . ℈ij.
Morphiæ . . . . . grs. iij.
Glycerini . . . . . ʒij.
Vaselini . . . . . ℥j.—M.

Sig.—Use in pile-pipe.

This is a sedative application, and I think a good one. The subacetate of lead, opium, and belladonna, in the form of suppositories or ointments, will be found serviceable. All sorts of astringents may be used; zinc, copper and nitrate of silver will all do good in some cases; occasionally fuming nitric acid is beneficial. By these means, combined with gentle dilatation, the life of a patient may in many cases be prolonged in comfort. If your patient complains of abdominal pain, put on hot fomentations. This, in a general way, covers the medicinal treatment.

The various surgical procedures at our command are the following: Dilatation, divulsion, colotomy, and proctotomy or rectotomy.

Before operating on a stricture, impress upon the patient the fact that he has a very serious trouble, and that the probabilities are that he will never be entirely well. If you choose to operate by dilatation use the soft rubber bougies. The dilatation should be intermittent, and not constant, because of the ease with which the rectum becomes irritated and peritonitis follows the application. Dilatation may be aided many times by nicking the edge of the stricture before passing the bougie. The one selected should be of a size to pass the stricture readily without much pain, and if there is any doubt in your mind as to the size to use, authorities say choose the smaller, the object being to cause absorption by gentle irritation. The treatment by gradual dilatation has been superseded by more radical measures. Some favor rapid divulsion; I do not, for I have seen some very serious complications following that operation. If the stricture is of a cancerous nature excision is indicated. Excision may also be resorted to in cases of benign strictures low down with happy results. I performed this operation once in a case of benign stricture, and the patient made a splendid recovery. Colotomy is to be performed in cases where the stricture is almost complete, and causes abdominal distention. I have assisted in performing the operation three times with very good results. The lumbar region is the usual site chosen, and the left side, for anatomical reasons. Should the obstruction, however, be high up the bowel, it may be performed on the right side. I have never witnessed a colotomy in the inguinal region. Allingham, who has performed

a great many of these operations, has performed inguinal colotomy but twice, both operations being infants, where they were not successful. Colotomy was performed upon ten of the patients referred to in the first part of this paper, by Allingham, and he says most of them did well. Five or six were still living at the time of writing. The main drawback to this operation is the disgust shown by the patients to having a false anus in the lumbar region. This feeling gradually wears off, and Allingham reports that two of his female patients married, after having the operation done, and made good wives. In case the stricture should heal after operation the false opening can then be closed.

I wish now to refer to Verneuil's operation, or, if you chose, proctotomy. This is often done as a substitute for colotomy. The operation consists in dividing the whole stricture, from its upper edge down to the coccyx and through its entire depth, thus forming a deep drain through which all discharges flow freely, the incision heals up, the ulceration ceases, and the stricture is sometimes cured. The operation may be done with the knife, with Paquelin's cautery, or the écraseur. If the knife is used, and a free gush of blood follows, pack the rectum with antiseptic lint. If the cautery or écraseur be used there will be very little hæmorrhage. By Verneuil's operation we got through-drainage through the triangular-shaped wound, and, at the same time, we get complete rest from the division of the sphincters. I think this the most practical and humane way of treating a bad case of stricture of the rectum. I remember in one case to have seen night-sweats arrested in forty-eight hours, and the patient rally, eat and drink, and get well from that moment. I have recently performed the operation three times, and the results were very satisfactory indeed. I wish in this connection to report the last case in which I performed this operation:

Mrs. P., referred to me by one of my professional neighbors, widow, aged thirty-five; good family history; has been long troubled with her bowels; never passed fæces of natural form; always in small, broken lumps, or sometimes had the ribbon-like stools; often passed blood, mucus and pus; has been emaciated for some time, but said she was perfectly well, except the bowel trouble. She dates her present trouble back two years, at which time she was operated on for hæmorrhoids by one of the famous quacks of our city, who cures all rectal troubles without the knife, cautery, or ligature, presumably by the laying on of the hands.

On examination I found an almost complete stricture about one and a half inches above the anus. I could not pass a No. 4 soft rubber bougie through it, and it was exceedingly painful to the touch. I found the edges of the stricture in a ragged condition from the severe ulceration. I placed the patient under chloroform, and with the sharp blade of a proctotomy knife passed to the upper edge of the stricture, I divided all tissues down to the coccyx; had very little hæmorrhage; dressed the wound with dry dressings, and in a few weeks it had entirely healed, and she could have a comfortable stool.

In conclusion, I wish to mention electrolysis, which it is claimed does good in the treatment of strictures of the rectum. Dr. Kelsey says, so far as producing absorption is concerned, it is a delusion, but he has seen some good from its counter-action, combined with rest and dilatation.

TWELFTH AND GRAND AVENUE.

MEDICAL EXPERT TESTIMONY.

BY JOHN J. REESE, M.D.,
PROFESSOR OF MEDICAL JURISPRUDENCE AND TOXICOLOGY IN THE UNIVERSITY OF PENNSYLVANIA, ETC.

THE recent Schmidt criminal trial at Media, Pa., has excited no little interest in the community. To the medical profession its chief interest and importance centres in the very remarkable discrepancy, not only between the expert testimony for the prosecution and that for the defence, but likewise in some important particulars in the evidence offered by the State's experts. Probably no case on record in the annals of criminal jurisprudence affords a more striking illustration of the imperfect and unsatisfactory character of our present system of so-called "expert testimony."

Here we have the spectacle of four highly respectable practitioners of from ten to thirty years' standing—one of whom had, during an experience of twenty years, performed many thousand post-mortems, and examined over 300 cut throats, and whose opportunities and studies in the lines of anatomy, pathology, and microscopy have been unequalled—all uniting and testifying to certain appearances presented by the wounds upon the dead woman's neck, but not agreeing among themselves in relation to certain other appearances, the examination having been made within a day or two after the death.

Among the points specially noticed and testified to by these gentlemen, were the situation, the nature, the direction, and the extent of these wounds. They all coincided in the opinion that certain of the injuries—those which penetrated to the vertebræ—were inflicted by a stabbing, or *thrusting*, of the lethal weapon, whilst the others were undoubtedly of the nature of incised wounds. And, further than this, two of those witnesses expressed their opinion that the right carotid artery had been cut, or partially severed, by a wound inflicted on the right side of the neck, which had extended around to the front of the throat.

Now, these are points of purely anatomical signi-

ficance, about which one might suppose there could be no possibility of doubt or opinion. But what a remarkable spectacle was presented to the court and assembled crowd of on-lookers when the defence produced before their astonished gaze the very neck of the dead woman, which had been dissected from the dead body by their experts, and which now, after nearly four months' interval, they were permitted to offer in open court for the inspection and personal handling of each juryman!

It appears that the body was secretly exhumed by the defence some weeks after burial, and without the knowledge or authority of the court or the prosecuting attorney; and that during the interval their experts made their several investigations, and now, on the witness stand, these experts, in number and professional standing and ability the equals of their opponents—three of them well-known professors in our medical schools—came forward and declared that the right carotid artery was *not cut at all*, but was uninjured, and that "the wound at the back of the neck" was only superficial, and did *not* penetrate to the bone. In relation to this latter assertion, it is to be remarked that it is somewhat misleading, as it implies that the other experts had asserted to the contrary; whereas, these latter had distinctly stated that it was the *second* wound of the neck, counting from the back (not the one farthest back), that had the nature of a stab, and which penetrated to the spine, and had probably caused the fatal shock.

Now, let us ask the question, what impression is such an exhibition of so-called "expert testimony" calculated to produce on the minds of the court and jury, and of the legal profession generally, to say nothing of the popular sentiment? Is it not likely to very much weaken the respect and confidence in all such testimony, and to bring it into disfavor, much to the detriment of justice? But, in passing we may remark, What impression would the average juryman gain by looking at, and even *handling*, an anatomical specimen nearly four months old, taken out of a jar of alcohol before his eyes? Would he not be very apt to both *see* and *feel* pretty much as the expert should describe and manipulate the parts before him?

This diversity in expert testimony, especially in criminal trials, is calculated to occasion much doubt and uneasiness in the mind of the medical jurist, and, as already observed, its frequent occurrence has greatly prejudiced the courts and counsel against all medical expert evidence. That this should be the result is, of course, greatly to be regretted, and the question that presses for earnest consideration is how to remedy this mischievous condition of things? This question has occupied the thoughts of distinguished men in both the professions of medicine and law, but no practical advance or improvement has resulted so far, at least in our country.

One thing is very certain: if *all* the experts were equally well grounded by experience, ability, and education, on the special points involved in the case before them, and if they were all equally honest and truthful, and supposing the question was simply one of *facts*—anatomical, pathological, or chemical—which could easily be demonstrated to the eye or touch, it would seem to be impossible that there could be any difference of opinion, since truth is undivided and uniform. Universal consent and agreement *must* be awarded to *facts*, if proved to be facts. Even theories and speculations, deduced from these facts, ought not to differ widely, if at all, with experts equally well educated and equally well equipped for their service, and equally honest, truthful, and unprejudiced.

But it is probable that under our present system of *voluntary* experts, taken pretty much at random from among the crowd of doctors, many of whom lack the needed experience and training, we shall never attain to that perfect harmony and unanimity of expert testimony so desirable, especially in criminal trials. The true remedy, as it appears to us, is to change the system radically, so as to make the medical expert *a State officer*—appointing so many for each State, divided off into judicial districts. Let these "experts" be physicians of known and approved moral and professional character; not novices, but thoroughly trained and experienced in all the details of anatomy, pathology, chemistry, and microscopy, not omitting also surgery and gynecology. They should devote their exclusive time and attention to their State duties, relinquishing all practice as physicians, and, of course, they should be amply compensated for their services. The expert should possess a laboratory properly furnished in which all needful experiments could be performed. He should be present at every criminal trial within his district, and sit with the judges as the *amicus curiæ*, ready at all times to give his expert opinion in cases requiring it. This opinion, be it observed, should be formed and sustained only after thorough previous examination, *made by himself* (perhaps assisted by others) of all the points connected with the case, such as (supposing it to be a homicide case) the examination of the body and surroundings where it was first discovered; the thorough autopsy; the toxicological examination, if poisoning be suspected; the microscopic researches for blood and seminal stains; for hairs and fibres of fur, and for other matters; also the full details in cases of infanticide, fratricide, rape, and legitimacy. He should further be prepared, either in his individual capacity or as a member of a regularly constituted commission, to give an expert opinion in cases of lunacy

or of alleged insanity in a prisoner in a capital case.

The above is an outline or sketch of what we conceive to be the true office and position of the medical expert. It will be recognized by many of our readers as taken in the main from that adopted and practised for many years in Prussia, and with so much satisfaction. It ought not to be difficult to engraft this admirable system upon our criminal jurisprudence. It would certainly challenge the approval of both the professions of law and medicine. One practical difficulty might seem to present itself: How should such "State experts" be appointed? One thing is very positive at the outset: the appointment should be entirely kept out of the sphere of politics. For this reason it would be extremely unsafe to entrust it to the Legislature; and probably, for the same reason, it would be better not to leave it in the hands of the Governor. Therefore, it might be deemed the wisest course to leave the appointment with the Supreme Court of the State, which might make it, after proper deliberation and inquiry, upon the recommendation of the leading physicians of the different judicial districts. This appointment should be for life or, "during good behaviour." It ought not, under any circumstances, to be subject to the caprice or dictum of any new judge who might come upon the bench subsequent to the appointment. The incumbent should only be removed "for cause."

If the above plan could be carried out in our State the following signal advantages would be attained: *First.* It would insure the presence and work of a recognized expert in every important criminal cause. *Secondly.* It would put an end to the disgraceful "war of the experts," which has excited so much ridicule and contempt, both in and out of court. This it would do by entrusting the whole case (so far as it pertains to expert testimony) to the State expert, who is sworn to conduct the whole necessary examination in all its details, without fear or favor, for either side; absolutely impartial; having no pecuniary compensation or other expectation to bias or tempt him to act as a partisan for either the prosecution or defence. Everything here must, of course, depend upon the absolute confidence reposed in the State officer by both sides. Given such confidence, no further or additional expert testimony would be required or deemed necessary; there would be a quiet and satisfactory acquiescence by both sides in his opinion given on the witness stand. But, if from any cause the defence should elect to have, *in addition, their own* expert witness, the above arrangement need not offer any objection. As a matter of fact, however, we are of the opinion that very few *voluntary* experts would care to measure lances with or oppose the State expert, always supposing the latter to be as near perfection as we would have him to be. If the former witness be "a good man and true," he would in all probability agree with the State's witness; but if he should differ with him, the strong probability would be that his testimony would be overbalanced by the authority and weight of the other, supported as it would be by his recognized experience and official character. *Thirdly.* It would create much greater confidence in the community in the decisions of the court and jury in criminal trials. At present there is a widespread feeling that these decisions are very materially influenced by the diverse opinions expressed by the medical experts of the opposite sides. This feeling would then be laid at rest. *Fourthly.* The expense incurred in criminal trials would probably be diminished, certainly not increased, by the adoption of the above proposed plan. The defense would be entirely relieved of all expenditure for expert testimony, unless they choose voluntarily (and, as we have shown, unnecessarily), to incur it. When we consider the number of homicide trials occurring every year in our populous districts, and the great expense incurred by the State in the payment of its different expert witnesses, it is believed that the aggregate amount would probably exceed the salaries deemed proper for the recognized State experts. These salaries need not necessarily be the same for all the appointees. Those holding the position in districts of country thickly populated, and requiring more constant attention to duty, would be likely to receive a higher compensation than others whose duties would be less onerous and exclusive. Doubtless, all the working details of the plan above sketched out would soon be satisfactorily adjusted if only the plan itself could be adopted. It is certainly much to be desired that this subject should receive from the proper authorities that consideration to which it is entitled.

CLINICAL MEMORANDA.

TOXICOLOGICAL.

Two Cases of Nutmeg Narcosis.—The following cases of nutmeg narcosis may be of interest as showing the alarming, if not fatal, result of the aromatic, if taken in large quantities.

The drug was taken in both instances by women residing in a house of questionable character, and with the object of producing abortion. The first case took one and a half nutmegs. As the symptoms were not alarming, no medical aid was summoned; but twenty-four hours later, when I was called to see the second case, the first gave me the following history:

CASE I.—One and a half nutmegs were powdered and taken in half a glassful of hot water. Two hours later the patient experienced severe burning pain in the stomach,

which continued one hour longer and was followed by a dreamy, half-unconscious condition, giving way to complete unconsciousness, which lasted six hours. She was then aroused by one of the inmates of the house violently shaking her. This procedure was necessary at short intervals for several hours. She then began to vomit, when she was given whiskey by her friends. Her recovery was so complete that when I was called to see her companion, twelve hours later, there was no evidence of the condition remaining.

CASE II.—As the quantity taken by the previous patient had not had the desired effect, my second patient concluded to take twice the amount, which was done in the same manner. Three nutmegs, being ground, were taken in hot water. About two hours later she experienced severe burning pain in the epigastric region, some nausea, but no vomiting. One hour later, or three hours after the aromatic had been ingested, she became entirely unconscious and was still in this condition eight hours later, when I was called. The appearance of the patient when I first saw her was alarming, to say the least. It was with the greatest difficulty that she could be aroused at all, and then only sufficiently to get an incoherent muttering. Respirations were 9 per minute, both expiration and inspiration being greatly prolonged; pulse 100 and feeble; temp. 100° F. Head buried backward in pillow; eyes turned upward and bulging and pupils evenly dilated; the extremities were cold; both the nails and lips were purple, showing venous stasis; there was relaxation of the sphincter of the bladder and rectum. She was sufficiently aroused by our efforts to empty the stomach with the stomach-pump, which was found impossible owing to the clogging, to allow the administration of an emetic of fifteen grains each of powdered zinc and ipecac, which thoroughly emptied the stomach in about twenty minutes. Strychnine and brandy were then freely given. Consciousness returned slowly, and at the end of twelve hours complete recovery took place.

In neither case did the drug have the slightest tendency to produce abortion, though the patient assured me she had known it to do so. This statement I am inclined, however, to doubt. The powerful narcotic symptoms observed in Case II., with the history of less marked symptoms in Case I., where a smaller quantity had been taken, prove, I think, without doubt, that nutmegs, if taken in larger quantities, say four or five of them, may produce death from paralysis of the respiratory centre.

L. J. HAMMOND.
712 SOUTH 10TH STREET.

ORIGINAL LECTURES.

THE HEART: ITS MURMURS, THEIR DIAGNOSIS AND TREATMENT, AND THE ACTION OF THE CARDIAC TONICS AS A CLASS.[1]

BY WILLIAM HENRY PORTER, M.D.,
PROFESSOR OF CLINICAL MEDICINE AND PATHOLOGY IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL.

LECTURE I.

GENTLEMEN: To-day I propose to discuss with you the subject of cardiac lesions, commonly known as valvular affections of the heart, and at a subsequent clinic the physiological and therapeutic action of the drugs commonly regarded as cardiac tonics and stimulants. But, first of all, it is absolutely essential that we should understand accurately the anatomical position and physiological mechanism of the heart, and also the pathological lesions following the mechanical defects in the action of this organ. We shall then be able to diagnosticate these disturbances accurately, and apply our therapeutic measures upon a thoroughly rational basis, with scientific accuracy, and not empirically or because somebody said so, and without a well-grounded reason.

In order to obtain a clear conception of, and to readily recognize, the various cardiac murmurs, we must have a thorough knowledge both of the exact position of the organ and of the mechanico-physiological laws governing its mechanism. This is especially true in regard to those murmurs which are located at the mitral orifice, where there is no organic lesion of the valve-segments.

We must become thoroughly familiar with the topographical arrangement of the heart. If, as is usually the case, the anatomical position of the heart is taken from frozen sections, it will appear upon a lower plane than that which it actually occupies during the life of the individual, and unless due allowance is made for this sinking, which occurs with all the viscera, and especially with the contents of the thorax, after death, great errors in diagnosis will, of necessity, be committed.

During life, too, the heart cavities and great bloodvessels are distended with blood, naturally causing the viscus to occupy a higher position in the chest than would be the case under other circumstances.

While the patient is alive, therefore, the heart may be said to occupy a triple oblique position in the thoracic cavity, or one corresponding to a line drawn from right to left, from above downward, and from behind forward—a position which will have for its central axis a line represented by transfixing the body from behind forward, from above downward, and from right to left, starting posteriorly at the sixth dorsal vertebra, passing through it and the chest cavity, and coming out on the anterior surface of the chest in the fifth intercostal space three and a half inches from the median line of the sternum.

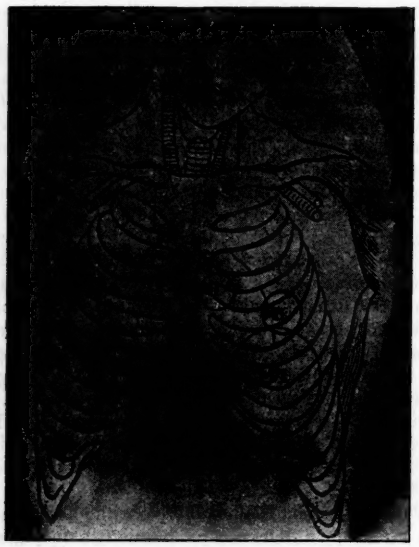
The base of the heart will correspond to a line drawn obliquely across the sternum from the first intercostal space of the left side to the second intercostal space of the right side, and the apex of the organ will be found just within the anterior chest-wall, behind the fifth intercostal of the left side at its junction with the sixth rib, three and one-half inches from the median line of the sternum.

The left side of the heart is the most posterior; this is especially true of the left auricle, which is also the most inferior portion of the organ lying adjacent to the anterior surface of the eighth dorsal vertebra deep down in the space between the diaphragm and the spinal column. Exception, however, may be taken to this statement by some anatomists, for they make that part of the right auricle which extends down to join with the inferior vena cava, as it passes through the foramen quadratus, the most inferior portion of the heart, but when taken as a whole, the auricular cavity of the left side is decidedly upon an inferior plane to that occupied by the right

[1] A series of lectures delivered at the New York Post-Graduate Medical School and Hospital.

auricle or the left ventricle. As a result of this posterior and inferior position of the left auricular cavity, the current of blood passing from it into the left ventricle naturally flows from behind forward, from right to left, and slightly from below upward, or directly across the chest cavity; but never from above downward. The course of this current corresponds to a line drawn from behind forward through the eighth dorsal vertebra, through the

FIG. 1.



chest, and coming out in front at the junction of the fourth rib and its corresponding costal cartilage. I have named this line, for convenience, the left auriculo-ventricular axis. From this description you will readily see that the tricuspid valve is situated well to the posterior limit of this left auriculo-ventricular axial line. All murmurs, therefore, that occur at the left auriculo-ventricular orifice are produced and transmitted by the current of blood passing in one or the other directions of this axis.

For convenience the etiology will be taken up later with the descriptions of the murmurs.

The pathological lesions that can be produced, in connection with valvular defects in the heart, are most completely illustrated by starting with a mitral incompetency and following it through all the succeeding steps.

The first mechanical change in the mechanism of the heart, acting as a pump, is the leakage of a certain amount of blood back from the left ventricular cavity into that of the left auricle. This causes a small amount of depletion in the general arterial system, and a filling of the left auricle from the left ventricular cavity at the same time that the normal flow is coming in from the lungs, through the pulmonary veins. As a necessary sequence the left auricle will be over-filled and caused to dilate. The auricular cavity will now contain an abnormally large volume of blood, which necessitates a certain amount of compensatory hypertrophy on the part of the muscular wall of the auricle, to enable the organ to free itself from this unduly large volume of blood within its cavity.

When this step in the process has been accomplished, the left ventricle will have an abnormally large volume of blood thrown into its cavity, which will cause in turn a moderate amount of dilatation and hypertrophy of the left ventricle. This primary hypertrophy enables the left ventricle to throw the requisite quantity of blood into the aorta and to keep up the normal arterial tension, and at the same time sustain the backward leakage, which is constantly increasing the dilating force brought to bear upon the left auricle, and being resisted by its compensatory hypertrophy, until, finally, the blood is forced back upon the pulmonary system of vessels, and a certain amount of engorgement of the capillaries in the lungs is developed and maintained. This condition necessarily increases the amount of work which has to be accomplished by the muscular power of the right ventricle.

The constant over-distention of the pulmonary capillaries keeps up a perverted nutritive condition of the lungs, which, in connection with the impeded circulation, gives rise, after a time, to the development of new connective-tissue formations, and a general interstitial thickening of the pulmonary structures. Accompanying this there is always a change in the coloring-matter of the blood, which causes it to be decomposed and deposited in the newly-formed tissue, giving to it a distinct reddish-brown color.

This peculiar lesion of the lung is known by the name of brown induration of the lungs, sclerosis, cirrhosis, pulmonary induration, or the chronic interstitial pneumonia of heart disease. The first is, perhaps, the most accurate, anatomically speaking, for it describes the macroscopic appearances perfectly, while the last is probably the least accurate, with the exception that it points to its etiology. This process, however, is not inflammatory in the strict limitation of the process, as it is now understood.

This increased volume of blood in the pulmonary circuit is followed, as we have already found, by hypertrophy of the right ventricular wall, and so long as this compensatory enlargement can be maintained the mechanical workings of the heart, practically speaking, are performed with sufficient effectiveness; the only mechanical and physiological defect being a leakage at the mitral orifice and the pulmonary engorgement, both of which, mechanically speaking, are compensated for by the augmented power of the heart.

The right ventricle, however, is dependent upon the aortic tension for its nutritive supply, and as the arterial pressure is not raised above the normal standard, but tends to fall below, the right heart is apt to degenerate. The fall in the blood tension, together with the impaired oxygenating capacity of the lungs, and the generally deteriorated nutritive state of the system will, in turn, diminish the nutritive supply distributed to the right side of the heart, and the compensatory hypertrophy of the right ventricle is not fully sustained, the muscular fibres composing the organ progressively degenerate, and its cavity becomes dilated, until the segments of the pulmonary valve are pulled apart and prevented from completely closing the pulmonary orifice.

The engorged pulmonary vessels now force the blood

back through the incompetent valve of the pulmonary orifice, into the right ventricular cavity, or, stated in other words, the ventricle cannot free itself, and its cavity is filled from the two sides—from the right auriculo-ventricular opening and from the pulmonary artery. As the tricuspid valve is never competent, and the venous tension behind it is commonly rated as a zero pressure, while the pulmonary arterial tension is now abnormally high, the aspiration force of the respiratory act and the pumping action of the right heart is quickly overbalanced. The blood, of necessity, flows back into the right auricle and into the superior and inferior vena cava with each contraction of the right ventricle. This regurgitation into the general venous system is made apparent by the pulsation of the jugular veins synchronously with the cardiac systole.

The result of this backward pressure upon the venous system is to cause, at first, a marked hepatic congestion, and there is a similar condition throughout the whole entero-hepatic circuit. The liver, in consequence, becomes enlarged, and the hepatic cells in the centre of the acini become stained brown, similar to the lungs, from the same kind of decomposed blood-coloring matter being deposited in the protoplasmic mass composing the hepatic cells. This condition is known as a pigmented or nutmeg liver. If this hepatic engorgement lasts for a considerable time, a false nutritive condition is established in the liver, and a slight amount of newly-formed connective tissue is developed, together with some fatty infiltration of the hepatic cells composing the outer portion of the lobules of the gland. This form of hepatic sclerosis is usually limited in extent, and never assumes the characteristic appearances of an alcoholic cirrhosis. It is a microscopic rather than a macroscopic change. In this way a moderate amount of hepatic sclerosis and fatty infiltration of the glandular cells of the liver is added to the well-marked and extensive congestion and pigmentation of the organ.

As a result of this entero-hepatic engorgement, both the intestinal and hepatic digestive functions become impaired, and general nutrition is poorly sustained.

When the liver has reached the limit of its expansibility, the kidneys and venous system at large commence to be positively engorged. The congestion of the kidneys causes a development of new connective tissue in the interlobular structures, or a renal sclerosis is developed, and without the intervention of any inflammatory action. After a time the epithelial cells of the uriniferous tubules become smaller and granular, until, finally, sufficient damage is produced in them to cause albumin and casts to appear in the urine, which before was only scanty and high-colored as a result of the impaired nutritive condition of the system and the local renal engorgement.

Finally, all the veins of the body become over-filled, and dropsy of the lower extremities or a general anasarca is developed.

To overcome this universal vascular engorgement and œdematous condition of the system at large, the action of the left ventricle is increased, or its muscular wall hypertrophied, but owing to the general nutrition being so much impaired, this secondary hypertrophy of the left ventricle, as it is called, is rapidly followed by dilatation of its cavity, and death of the individual, being, as it were, the last act in the circle of events, and that, too, one of short duration.

With the other mechanical defects implicating the aortic and mitral valves, the round of changes will be of a similar character, but starting at a different point, some to reach the maximum quickly, as is the case in regurgitation at the aortic valve when due to organic and progressive lesions, or more slowly, as is frequently witnessed in the case of an aortic stenosis.

With these pathological changes clearly in mind, you will readily see that the chief object in treating cardiac lesions must be direted toward the development of a higher nutritive state of the system, and the development of an increased working-power in the muscular walls of the various cavities composing the heart, until the mechanical defect is fully compensated for, and the vascular congestion removed, or reduced to the minimum.

The causes of organic obstruction, giving rise to a mitral direct—stenotic—murmur at the bicuspid orifice, are acute endocarditis with roughening of the valve segments by out-growing vegetations, or congenital malformation; or chronic endocarditis, with or without calcareous depositions, all of which narrow the mitral orifice, and prevent a free egress of blood from the left auricle into the left ventricle.

The common law which governs the seat of development and the transmission of all cardiac murmurs may be stated as this: The abnormal sound, called a murmur, is heard with greatest intensity just beyond the point of its development, and is transmitted from this point forward or backward in the direction of the current of blood, which, together with the valvular defect, is the cause of the murmur. Forward and backward, in this instance, refer to the current of blood and not to the antero-posterior positions of the body.

With a narrowing of the bicuspid or mitral orifice, which is due to an organic lesion, an abnormal sound is produced in the line of the left auriculo-ventricular axis, by the obstruction to the normal current of blood in its passage from the left auricle to the corresponding ventricular cavity, and has often been called a presystolic murmur. This is true so far as the ventricle is involved, but, in reality, it is a systolic murmur of the auricle, and is developed at the height of a rigorous auricular contraction. If, however, for any reason the muscular power of the auricle becomes enfeebled, the murmur may entirely disappear, to be again reëstablished when the contractile power of the muscular tunic of the auricle is regained. This transitory character of the mitral direct murmur has led some to deny its existence, but frequent and well-defined clinical observations of cases with a distinct mitral direct murmur, substantiated by the post-mortem findings, prove, beyond a doubt, that such a murmur is produced and heard; that by it we are enabled to say with certainty that a bicuspid stenosis exists during the life of the individual, and that it will be found when the necropsy is performed.

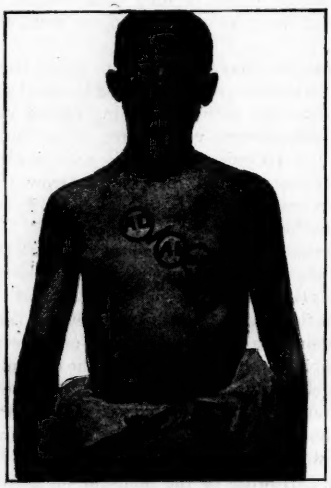
This abnormal sound is also called a mitral obstructive or direct murmur. The latter is the term which I have chosen to employ in the chart before you, and also in the diagrams upon the patient.[1] It is so named be-

[1] Ring lettered M D, Figs. 1 and 2.

cause the blood which produces the murmur is flowing in the normal direction against an abnormally small or roughened auriculo-ventricular inlet. This murmur, which is dependent upon these two conditions, is heard with greatest intensity just in front of, or over, the left ventricle, at the point where the left auriculo-ventricular axis strikes the anterior surface of the chest-wall, or over the junction of the fourth rib and its adjoinining costal cartilage.

It is a high-pitched sound, and is practically not transmitted, being heard over the limited præcordial area, confined within the circle marked M D in Figs. 1 and 2. It is usually of short duration, but may be somewhat prolonged, if the obstruction be very great and the time

FIG. 2.



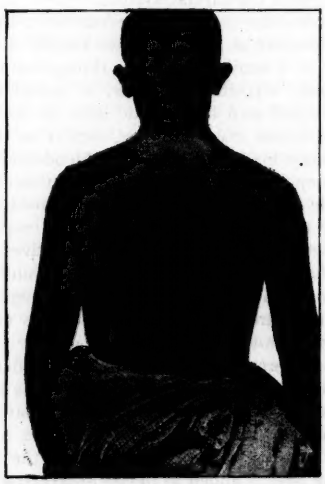
occupied by the auricle in emptying itself be considerable. Occasionally a case may be examined in which the murmur is prolonged, and more widely transmitted and heard outside this limited zone, but the nature of its production is such that, under ordinary circumstances, it is more apt to be limited, both in regard to its duration and in the area of its transmission.

The etiology of the mitral indirect or regurgitant murmur at the bicuspid orifice, which has been developed from organic lesions, is acute and chronic endocarditis, with their resulting changes; rupture of a segment of the valve; rupture of a chorda tendineæ, and acute and chronic dilatation of the left ventricle, all of which tend to prevent a complete closure of the left auriculo-ventricular orifice during the ventricular systole. To this list congenital malformations might be added, but these abnormalities are more likely to cause a direct than an indirect murmur, or the two together, rather than a simple and single mitral regurgitant murmur.

With an incompetency of the bicuspid orifice due to organic changes, the abnormal sound is produced by the blood being forced back from the left auricle against the normal current. The mitral indirect murmur is distinctly heard at the apex, within the circle marked M I on the chest of our patient and in the chart.[1] It is transmitted to the left, and is usually lost at the anterior axillary line, but is heard with equal intensity posteriorly at the superior border of the eighth dorsal vertebra, or between this point and the inferior angle of the scapula, as indicated in the posterior view of our patient.[1]

According to the ordinary law of the production and transmission of cardiac murmurs, already given you, this murmur should only be heard posteriorly; but occurring as the result of the left ventricular contraction, or where the left ventricle and heart, as a whole, are becoming solid bodies, and impinge more forcibly against the anterior and bony chest-wall, which is also a dense body, they together obey the general physical law of transmission of sound by dense bodies, and bring

FIG. 3.



the sound distinctly to the anterior surface of the chest-wall, within the circle lettered M I in our chart and on the patient's chest.[2]

In my early days as a student of medicine we were taught that a systolic murmur at the apex, or one heard within the circle lettered M I in the chart and on our patient, if transmitted to the left and heard distinctly behind at the ring lettered M I, Fig. 3, always indicated an organic lesion of the valve guarding the mitral orifice. This statement, however, I have found frequently does not hold true at the necropsy examination, and still less frequently so at the bedside or in the clinic.

A functional obstructive murmur at the mitral orifice is often heard in cases where there is considerable aortic insufficiency. The blood regurgitated from the aorta into the left ventricle rapidly fills the lower portion of the cavity, and floats up the inferior, or, at least, one of the bicuspid segments, too quickly against the incoming current of blood from the left auricle, and produces an obstruction, which, at the height of the auricular contraction, gives rise to a short, but quick, sharp, and decided obstructive or mitral direct murmur. This abnormal sound is differentiated from one due to organic narrowing at the valve by its disappearance where the

[1] Ring marked M I, Figs. 1 and 2.

[1] Ring marked M I, Fig. 3.

[2] Ring lettered M I, Figs. 1 and 2.

heart's action is stimulated, its working power increased, and the amount of actual regurgitation diminished, or, in part, compensated for by a prolonged systolic act on the part of the left ventricle, and a diminished diastolic pause.

Murmurs due to organic changes at the bicuspid orifice have been pretty thoroughly understood for a long time, but that condition in which positive and indisputable evidence of mitral insufficiency is obtained upon physical examination during the life of the patient, and later the necropsy revealing a perfectly normal and competent valve, and the absence of any left ventricular dilatation, is not generally understood nor described.

The etiology of this class of murmurs has been in doubt for a long time, and has given rise to an endless amount of discussion *pro et con*—some, in fact, have gone so far as to doubt the diagnostic value of physical signs in connection with cardiac disturbances, on account of this contradictory evidence between the living and dead subject. The difficulty, however, is not so much with the rational and physical evidences, as it is with the interpretation placed upon the signs and symptoms presented by each case. My experience, which has been somewhat large, both at the bedside and clinic, and at the post-mortem table, has been such that I am convinced that we are justified in saying, that when the rational and physical signs presented in connection with cardiac valvular disease are correctly expounded, our diagnosis will be accurately confirmed in the vast majority of instances; when it is not, the fault is with the interpretation placed upon the symptoms presented.

This functional regurgitation at the bicuspid orifice producing a mitral indirect murmur, is the abnormal sound which is of the greatest importance on account of its frequent occurrence, and because it is so often mistaken for a sound due to positive organic changes. This murmur has been explained by an over-powerful contraction of the left ventricular wall, causing an over-closure, and a forcible sliding of the valve-segments upon one another, and thus producing a sound; but while this might hold true in a few instances, it is not sustained, in the majority of cases, by the necropsy findings. To have friction enough to cause so loud a sound would necessitate a roughening of the valve, and this would lead to positive thickening of the leaflets. This, however, is not the case; for at the necropsy the valves are found to be perfectly smooth, thin, and absolutely free from any lesion. The physiological signs also disprove this theory, for a murmur produced by too tight closure would not give rise to any leakage or regurgitation of blood at this orifice, and consequently there would be no distinct murmur heard posteriorly, as is the general rule.

A sound heard at the apex circle, with and after the first sound of the heart, not transmitted nor heard behind, might justly be attributed to such a condition, and frequently we do meet with just such cases, in which there is a distinct intra-ventricular systolic hum or murmur, caused by over-vibratory tension of the bicuspid segments, and their attached chordæ tendinæ, dependent upon excessive muscular activity. But with this abnormal sound there is no leakage at the left auriculo-ventricular orifice, thus ruling it out of the regurgitant class of lesions and murmurs. Those cases in which a positive murmur is heard in front, over the mitral indirect area, and in which the murmur is transmitted to the left, and is heard posteriorly with equal intensity, near the junction of the seventh and eighth dorsal vertebræ, or midway between these bones and the inferior angle of the left scapula, and where the necropsy reveals no organic lesions in the segments of the bicuspid valve or its attachments, and where there is no dilatation of the left ventricular cavity, but in which the gross appearance of the valve and of the heart itself is normal, are conditions of special interest to us from a clinical and practical standpoint.

If we stop for a moment and consider the anatomico-physiological mechanism of the heart, the explanation is easy. As is well known, the ventricular wall is composed of seven distinct layers of muscle fibres, or for convenience and simplicity they may be considered as four. We have, connected with these layers, two sets of papillary muscles, one springing from the anterior and the other from the posterior wall of the ventricle, to which the bicuspid segments are guyed by their chordæ tendinæ. Where everything works in unison, the two segments of the valve float toward the auricular cavity, and their margins are brought into juxtaposition at a given point, and held there by the equal and synchronous contraction of the two sets of papillary muscles and the tension of the attached chordæ tendinæ. In this way the auriculo-ventricular orifice is perfectly closed and regurgitation absolutely prevented.

If, for any reason, the innervation of the heart is unequally distributed to the different papillary muscles, or the muscular layers become unequally nourished, their unity of contraction is disturbed, and instead of this perfection of action just described, one set or layer of muscles contracts more forcibly or more quickly than the other, and the papillary muscles shorten irregularly and unevenly.

When the ventricle contracts, this result is developed: one segment or the other, failing to stop at just the exact point to meet its opposite, is forced on into the auricular cavity, while its opposing fellow-segment is drawn more completely into the ventricular cavity; consequently, instead of complete closure of the orifice, an actual gap or insufficiency is produced, just as perfectly as if a piece of the valve was wanting. Through this opening a positive escape of blood from the ventricular to the auricular cavity takes place, which gives rise to all the physical signs of an organic insufficiency with regurgitation. The temporary results are the same as if there existed positive and irreparable defects. The rational signs are also the same in both instances. If permitted to continue, the results may be the same as those developed from positively organic lesions.

Organic and functional insufficiency at the bicuspid orifice can easily be differentiated during life, not by their rational and physical signs, however, but by an appropriate plan of treatment. If the cause of the latter be a deficient innervation, by giving such remedies as will restore the nerve-power distributed to the heart, the signs and symptoms will be found quickly to disappear, all regurgitation will be prevented, and the patient will be relieved from all unpleasant symptoms. When due to defective nutrition, with a lack of, or an uneven innervation and irregular muscular action, true cardial stimu-

lation and an increased nutritive vitality will cause a like satisfactory result. If, on the other hand, the physical signs are due to positive defects in the valve, the same line of treatment will often decidedly improve the condition of the patient, but it will not cause a disappearance of the physical evidences. It may shorten the duration of the murmurs, but the abnormal sounds will be more easily and accurately recognized. In this way we can easily differentiate between the two conditions, and draw the correct deductions from the signs and evidences presented. A positive diagnosis should never be made until the results of treatment, continued for a few days, have been noted and the case examined a second or third time.

The administration of digitalis in the functional class will permit a disappearance of the murmur, as you will clearly see when we come to study, at a subsequent clinic, the so-called cardiac tonics and stimulants as a class. The continued use of digitalis may convert a functional case into one where we may have an irreparable condition.

HOSPITAL NOTES.

WOMAN'S HOSPITAL OF PHILADELPHIA.

SERVICE OF JOHN B. ROBERTS, M.D.,
PROFESSOR OF SURGERY.

Reported by MARY E. ALLEN, M.D.,
DEMONSTRATOR OF SURGERY.

Tuberculosis of the Right Kidney; Nephrectomy Attempted, but Abandoned; Death.—This patient, forty years of age, was admitted to the hospital April 23, 1890, suffering with a tumor upon the right side in the hypochondriac region.

The patient's mother died of consumption. The patient had pleurisy on the left side when nineteen years of age, from which she seems to have recovered perfectly, and then married at twenty. Two years ago the patient had pneumonia, and has never been well since, her chief suffering seeming to be dyspepsia, which obliged her to live upon liquids most of the time.

During the summer previous to her admission to the hospital she experienced, while at work, a sudden and severe pain over the region of the liver which passed down into the right leg. After this she was confined to her bed for fourteen weeks. During this time the urine was very scant and cloudy, and she experienced a burning sensation after urination. She also suffered from alternate constipation and diarrhœa, the stools, however, being only occasionally light colored. Her weight was ninety-five pounds. She had lost forty-seven pounds during the last two years, and consequently showed marked emaciation.

The tumor was about the size of a fœtal head at term, and extended backward, and became more prominent when pressure was made over the region of the kidney of that side. It was, therefore, pretty certainly determined that it was connected with the kidney in some manner. It might, however, be a distended gall-bladder full of stones, and merely raised when pressure was made over the kidney from behind. Dr. Roberts stated that should the kidney itself be involved, it might be either as an abscess of the kidney, a stone in the kidney, as cancer, or as tubercular disease.

The incision made in the semilunar line of the right side and over the most prominent part of the tumor was at first about three inches in length, but was subsequently enlarged to six inches.

This point for the incision was chosen by Dr. Roberts after consultation with Dr. W. W. Keen, who by request was present at the operation. If there was pus, of course a posterior incision was the most desirable, on account of better drainage, and the extra-peritoneal position. The uncertainties were, however, so great that the anterior opening was determined upon. As soon as the peritoneum was opened, the omentum protruded, but could not be slipped up, because it was adherent to the anterior surface of the tumor. It was, therefore, cautiously cut and torn until the tumor proper was visible. This appeared to be a thin-walled sac, full of whitish liquid, perhaps pus.

An endeavor was now made to evacuate the contents with a sharp trocar and canula of large size without success, as the liquid was too thick to run. Sponges were then packed around the tumor to isolate the peritoneal cavity, and a free incision was made, through which the thick, curdy contents were evacuated. There was more than one cavity, however, and the walls between them were too thick to allow of opening them all into one, and thus to empty the tumor entirely. Neither was it possible to break up the posterior adhesion and extirpate the kidney, though this was thoroughly tried. A clamp was, therefore, placed within the opening already made, and the peritoneal covering of the tumor stitched to the peritoneal edge of the abdominal wound. After thoroughly cleansing the abdominal cavity with filtered boiled water, at a temperature of 110°, the peritoneal edge of the wound was also stitched to the skin, so as to close all raw surfaces as far as possible, and to wait for inflammatory adhesion to take place.

It was the intention of Dr. Roberts to then incise the tumor freely and thoroughly evacuate it. Two drainage-tubes were placed within the abdominal cavity at the angles of the wound, one passing backward and the other downward, to remove any oozing that might result from the attempts at radical removal. Great difficulty was also experienced in stitching the tumor to the peritoneum, as its external walls were so thin that even the slight hold taken by the needle ruptured them in one place, and the cheesy contents began again to pour out from a new cavity. It was, however, caught on sponges, a second clamp adjusted, and the operation continued.

During the operation the patient was very feeble, necessitating the administration of hypodermic injections of whiskey, digitalis, ether, and aromatic spirits of ammonia, to prevent her from dying; she was, therefore, in a very precarious condition when put to bed, and lived only twenty-four hours after the operation.

The post-mortem examination was performed through the incision made at the time of the operation, and although she lived such a short time, union between the peritoneal surfaces had already taken place. There was no evidence of hæmorrhage into the abdominal cavity. The tumor was removed with great difficulty post-mortem, being strongly adherent to the liver, diaphragm, intestines, and spinal column, and it proved to be the right kidney, greatly distended in pockets by the

tuberculous, cheesy deposits, in some of which calculus, sand, and concretions were found.

The patient's death was due to the shock of the operation.

MEDICAL PROGRESS.

Treatment of Ophthalmia Neonatorum.—LA PERSONNE, in the *Journal de Médecine de Paris*, gives the following treatment for the prevention and cure of this condition. The vagina is to be washed out by an antiseptic solution before labor in order to free the birth canal from any products which may produce irritation of the eyes of the child. Immediately after birth, at the time at which the bath is given, a solution of carbolic acid in the strength of 1 : 100, or the following prescription of corrosive sublimate should be employed:

℞.—Corrosive sublimate . . . 1 grain.
Tartaric acid . . . . 2 grains.
Distilled water . . . . 8 ounces.

A few drops of this solution should be dropped into the eye.

In other cases the following may be employed:

℞.—Nitrate of silver . . . 1 grain.
Distilled water . . . . 3 drachms.

Prescriptions for Sore-throat.—According to the *Journal de Médecine de Paris*, CAPART recommends the following prescriptions in this condition. For a simple catarrhal sore-throat he advises a gargle, such as the following, to be used every hour:

℞.—Borax . . . . . 15 grains.
Salicylate of soda . . . 30 "
Decoction of althea . . . 7 ounces.
Honey of roses . . . 1 ounce.

If after using this for twelve or twenty-four hours the affection continues an astringent gargle is of value, made up as follows:

℞.—Alum . . . . . 1 drachm.
Alcohol, Powdered glycerin } of each . 3 drachms.
Distilled water . . . . 10 ounces.

In cases in which there is sore throat with herpetic spots upon the pharynx it is ordered that the patient shall go to bed and shall keep pieces of ice in the mouth, while poultices are applied externally and lemonade, strongly acid, should be administered. In these cases the following prescription should also be used:

℞.—Chlorate of potash . . . 45 grains.
Distilled water . . . . 1 ounce.
Simple syrup . . . . 2 drachms.

A teaspoonful to a tablespoonful may be given every hour, and if the patient is an adult the quantity of the chlorate of potassium may be increased. Where there is much swelling of the throat with tonsillitis of the phlegmonous form accompanied by great pain, five or six leeches should be applied back of the angle of the jaw and ice kept in the mouth. The following powders should also be administered internally.

℞.—Salol, Sugar of milk } of each . . 30 grains.

Divide into three powders and take one every hour.

Or a gargle may be employed as follows:

℞.—Salicylic acid . . . . 15 grains.
Acetate of sodium . . . 7 "
Distilled water . . . . 10 ounces.
Syrup of roses . . . . 1 ounce.

In cases in which there is a tendency to a return of the sore-throat, a gargle composed as follows is useful as a prophylactic:

℞.—Crystallized carbolic acid . . 1 drachm.
Alcohol . . . . . 5 drachms.
Essence of peppermint . . . 15 drops.

Ten drops of this mixture should be placed in a half glass of water morning and night and used as a gargle.

Or the following may be employed:

℞.—Salol . . . . . 1 drachm.
Alcohol . . . . . 5 drachms.
Essence of peppermint . . 5 drops.

A teaspoonful in a tumblerful of water three or four times a day as a gargle.

The Use of Atropine in the Treatment of Localized Muscular Spasm.—Dr. W. M. Leszynsky read a paper with this title before the New York Neurological Society, February 10, 1891. The speaker reported, in March, 1884, a case of clonic torticollis successfully treated by the subcutaneous administration of the sulphate of atropine. The first case of the present series was that of a man, thirty-seven years of age, who had, three years previously, muscular spasm beginning on the right side of the neck, which developed six weeks after an abscess had been opened at the angle of the jaw on the right side. The force of the spasm was increased by mastication and closure of the jaw, and it was more active upon mental excitement. He was frequently aroused from sleep by the severity of the paroxysm. There was no complaint of pain, but only of numbness in the right lower lip. He was treated by means of medicine and electricity for four months without relief. There were well-pronounced clonico-tonic spasms affecting the right platysma, and forcibly drawing downward the fascia about the chin and the lower angle of the mouth. The clonic character of the spasm predominated, and was almost constant. The muscle was hypertrophied to nearly four times its normal size, and its outline was distinct and well-defined. There was an area of complete anæsthesia one and one-half by three centimetres at the border of the lower lip near the angle of the mouth on the right side, which extended inward upon the mucous membrane and the alveolar process of the lower jaw. The mechanical irritability of the facial muscles was well marked, and the jaw-jerk was demonstrable. There was no apparent caries of the teeth or abnormality in other portions of the body. The treatment was commenced by the application of a cantharides plaster over the affected muscle. After one week had elapsed, an injection of $\frac{1}{120}$ of a grain of sulphate of atropine was made into the platysma. On each of

the following three days an injection of $\frac{1}{100}$ grain was given, when the exaggerated mechanical irritability of the facial muscles had markedly diminished, and there was an abatement in the frequency of the spasm. Sensation was also returning in the anæsthetic area. The dose of atropine was gradually increased until $\frac{1}{48}$ of a grain was given daily. At the end of two weeks the most energetic effort by pressure or otherwise failed to produce any spasmodic action in the platysma. The administration of the atropine was then discontinued. One month later the patient reported that there had been no return of the spasm. The solution used was sulphate of atropine 1 grain to distilled water 1 ounce. One minim of this solution represented $\frac{1}{480}$ of a grain of atropine. The speaker's method was to give 4 minims at the first injection and to be on the alert for constitutional effects. Upon discovering that there was no idiosyncrasy in regard to the drug, it was administered once daily, and the quantity gradually increased from day to day until the desired effect was produced or intolerance was established. The production of severe constitutional symptoms is not an essential feature in this plan of treatment. One of the physiological effects of the drug, when given in sufficient quantity, is to paralyze the motor nerves, first affecting their trunks.

Dr. V. P. GIBNEY, on being asked for his views on the subject of the paper, said that he did not know whether the author had included in his earlier reports cases of hysterical torticollis, rotary spasm, and similar affections. He doubted whether it was the intention to include that class of cases known as spastic paraplegias. The cases which came under his personal observation were only those of functional disturbance or deformity.

Mouth-wash for Fœtid Breath.—

℞.—Water . . . . . 2 pints.
Alcohol . . . . . ½ drachm.
Borax . . . . . 15 grains.
Thymic acid . . . . 7 "

Or,

℞.—Decoction of chamomile . 10 ounces.
Glycerin . . . . 2½ "
Chlorine water . . . 6 drachms.

Or,

℞.—Peppermint water . . . 1 pint.
Aqua lauro-cerasi . . . 2 ounces.
Borax . . . . . 6 drachms.
Essence of peppermint, a sufficient quantity.

All of these mixtures may be used as gargles where the decomposition of particles of food in the crypts of the tonsils or the buccal cavities produces fœtid breath.

Treatment of Chronic Alcoholism.—ERGOLSKI reports ten cases of chronic alcoholism successfully treated by means of hypodermic injections of the nitrate of strychnine in the dose of $\frac{1}{30}$ of a grain. The amelioration in the patient's condition after these injections was constant. The dyspeptic symptoms disappeared and the patient did not desire alcohol. So complete was the action of the remedy that Ergolski regards it as almost a specific. A great advantage to be gained by the subcutaneous administration of the drug is that no irritation of the gastro-intestinal canal is produced at a time when it is apt to be affected by catarrh.—*Journal de Médecine de Paris.*

Treatment of Goitre.—According to the *Journal de Médecine de Paris*, AUERBACH has obtained an incomplete cure of goitre by the interstitial injection of osmic acid combined with massage.

℞.—Osmic acid . . . . 1 grain.
Distilled water . . . 3 drachms.

The injection of this liquid is resorted to every two days, and massage is practised daily for fifteen minutes. Iodide of potassium was also given internally. After three weeks of this treatment the tumor diminishes very greatly in size and the subjective symptoms disappear.

Vomiting of Pregnancy.—POMBRAK has employed with success menthol with sugar of milk for the treatment of the vomiting of pregnancy. He has also used tincture of iodine for the same purpose. The case in which he employed menthol with advantage was that of a highly nervous young woman suffering with chlorosis.—*Journal de Médecine de Paris.*

Syphilitic Ulcers.—In *La Semaine Médicale*, the following prescriptions are given for the treatment of syphilitic ulcers.

℞.—Salicylate of mercury } of each 15 grains.
Carbonate of potassium }
Distilled water . . . . 6 ounces.

Apply to the part by means of compresses, or if an ointment is preferred, the following may be used:

℞.—Salicylate of mercury . . 15 grains.
Vaseline . . . . . 1 ounce.

Mix and use externally.

Sulphate of Copper.—BOLTON recommends sulphate of copper in the dose of a twenty-fifth of a grain for the relief of the muscular cramps which sometimes affect pregnant women.—*La Semaine Médicale.*

Powder for Atrophic Rhinitis.—HALL is stated to recommend the following in the treatment of atrophic rhinitis:

℞.—Bicarbonate of sodium } of each 5 grains.
Borate of sodium }
White sugar . . . . 12 grains.

This is to be dissolved in two ounces of hot water and snuffed up the nostril thoroughly. After this has been employed to loosen any secretion which may remain, intra-nasal instillations of weak solutions of alum, in the strength of 1 per cent., or in other cases sulphate of zinc, nitrate of silver, or powdered iodoform, or aristol, or salol, or boracic acid, are useful. After these applications have been made, it is well to apply to the mucous membrane of the nasal cavity a spray of eucalyptus as follows:

℞.—Vaseline . . . . . 1 ounce.
Essence of eucalyptus . . 1 drachm.

In other cases it is only necessary to spray the nostrils with liquid vaseline.

CURRENT LITERATURE.

SATURDAY, MAY 23, 1891.

EPIDEMIC RELATIONS OF DIPHTHERIA IN NORWAY.

AXEL JOHANNESSEN, of Christiania, reviews the various epidemics of diphtheria which have occurred in Norway, and makes some remarks upon diphtheria and croup. He concludes that the largest part of the cases of croup which occur both before and after the great epidemics of diphtheria are of diphtheritic nature.

An interesting point is developed regarding the mode of invasion of the disease and the parts of the country affected. These, in different epidemics, have been to a certain extent the same. Density of population and such means of conveyance as railways and streets do not appear to play any part in the spread of the disease. The coast districts have one-third more cases of diphtheria than the inland districts, and the fishing districts of the coast are the most affected. At Dorschfang from 25,000 to 30,000 men collect in 5000 huts, being huddled together under bad hygienic conditions. At Tromsö-Stift diphtheria generally shows the highest number of cases of the disease—as many as 105 per thousand of population. Moreover, statistics also show that those districts whence the fishermen are sent out and return again are invaded by the disease in proportion to the number of fishermen, a condition which is true of other epidemic diseases, especially typhoid fever.

In Norway and Sweden the morbidity in the cities is, on the whole, greater than that of the country; but usually epidemics in cities develop more slowly, and rarely reach an excessive height; whereas, it is much more frequent for an epidemic in the country to rise rapidly to a high ratio between disease and population. The mortality is absolutely greater in the cities; on the other hand, the percentage of dead of those medically treated in the country districts is considerably higher. This circumstance seems to be due to the fact that throat diphtheria is, in the country, more fatal than in the cities, where, on the other hand, a decidedly greater number of victims is furnished by diphtheria of the larynx.

The great variations in the disease curves are not primarily dependent upon meteorological influences. —*Deutsche med. Wochenschrift*, March 19, 1891.

DIAGNOSTIC VALUE OF THE PLASMODIUM OF MALARIA.

O. HERTEL and C. VON NOORDEN report, from Gerhardt's clinic, two cases which illustrate nicely the diagnostic value of the plasmodium of malaria. The first case was that of a woman, twenty-four years of age, with no hereditary tubercular or other taint. For the past few years she had drank beer to excess. To this excessive use of alcohol she attributed the pains in the stomach and vomiting from which she had suffered since May, 1890. On July 3, 1890, she was again taken sick with violent pains in the stomach, loss of appetite, and fever. On July 5th, at 12 M., she had a chill, followed by pains in both sides on taking a breath. On July 6th, 7th, and 8th, chills at the same time of day (12 M.). At 2 P. M., temperature 104.1°. Organs of throat and chest healthy. Some tenderness in epigastrium. Other organs of abdomen apparently healthy. Pains in stomach continued. Chills (followed by fever and sweat on the 10th) occurred July 9th, 10th, and 11th, from 11.30 A.M. to 2 P.M. No plasmodium could be found. On the 11th the spleen extended to the edge of the ribs. No chill occurred on July 12th, but one occurred July 13th. Quinine was then given; the chills did not cease, but returned at a later hour. The case was not clear. Continued absence of the plasmodium indicated that the disease was not malarial, and yet otherwise the disease appeared to be of that nature. On July 16th, the attacks of fever ceased quite suddenly, almost as though the quinine had had a delayed action upon them. In the next few days the spleen became swollen.

On July 24th the rise in temperature recurred, but in a moderate degree, without chill, and irregularly distributed over the day. Two days later a pleural effusion was discovered behind on the right side, and at the same time there were heard at the right apex fine crackling râles, which disappeared completely after a deep few breaths. There was, and had been, no sputum. After the lapse of eight days the percussion note over the right apex was higher, shorter, and softer, and the breathing not purely vesicular. The patient was then dismissed. In October following she was found to have marked infiltration of the right apex of the lung and pronounced tubercular ulceration of the larynx. Thus the case became clear.

In the second case, a man, twenty-eight years of age, was admitted June 28, 1890. He was, up to the time of his sickness, at work digging a trench, throwing up earth, and putting down water-pipe. About eight days before his admission he was taken sick with pains in the neighborhood of the navel and sacrum, and was in a condition of great stupor. On June 25th he was seized with a chill, which is said to have been repeated almost daily up to June 28th. He was generally unwell and was able to work only two hours a day. The chill, which occurred nearly every day early in the morning, was accompanied by a feeling of heat, headache, and stupor, disturbances which subsided gradually in the course of the afternoon after a pretty profuse sweat. The attacks are said, however, not to have been equally violent every day, but to have been more severe every second day. The liver was somewhat enlarged downward; the spleen was scarcely enlarged in breadth. Over the lung, in the neighborhood of the right nipple, there was a narrow zone having a tympanitic percussion note, and over this area were heard fine moist râles. There was no expectoration.

Up to this point the examination showed a febrile disease, the cause of which was obscure. On July 30th there was a violent chill. Plasmodia were found in the blood. Chills recurred until July 5th, when quinine was given. Plasmodia were found at the height of the disease. The patient was dismissed cured July 14th. The cause of the disease became clear as soon as the blood was examined.

Regarding the detection of the plasmodium, the authors say that fresh, unstained preparations, viewed through a good microscope with an immersion lens at the bedside of the patient, give the most beautiful pictures. If the blood cannot be examined in this way, cover-glass preparations can be made, heated over the flame or fixed with absolute alcohol, and stained with concentrated methyl-blue or malachite-green. When prepared in this way the plasmodia, frequently carrying pigment in the middle of their bodies, are stained pale blue or greenish and stand out sharply. They cannot be confounded with anything else, whether they are included in a red blood-corpuscle or free in the serum.—*Berliner klin. Wochenschrift*, March 23, 1891.

ETIOLOGY AND DIAGNOSIS OF PURPURA HÆMORRHAGICA.

LETZERICH believes the cause of purpura hæmorrhagica to be a special bacillus, which in its conditions of growth presents some similarity to the anthrax bacillus. Both form, in Koch's stick-cultures, more or less irregular colonies, the centre of which consists of reticular threads which, at the edge, pass over into sheaf-shaped little bundles, partly bent back. They differ essentially, however, in their size and in the form of the spores. Although in both a constriction of the rodlets is observed in bacilli of different lengths, those of purpura are shorter and narrower, and the spores are very small and absolutely round, not large and oval, as in anthrax bacilli. Moreover, the bacillus of purpura fluidifies gelatin only with great difficulty, at a high temperature (77° to 88° F.), and in the immediate neighborhood of the colonies.

In the petechiæ of men and of animals subjected to experiment, are found groups of microörganisms arranged in manifold sheaf-shapes, and part of them segmented; in these, often at uniform distances, are spores, frequently lying thickly under one another.

The surfaces of the points of inoculation in Koch's nutrient gelatin present smooth, crescent-shaped depressions, which are recognizable only upon attentive observation.

The bacillus of purpura forms no toxin, but only a weak ptomaine; this explains why there is only occasional slight evening fever.

Sections through petechiæ are best stained with simple methyl-violet solution, while for teazed and isolated preparations and for diluted blood carbol-fuchsin is preferable.

Letzerich describes an acute, or subacute, and a chronic form of purpura hæmorrhagica. They are occasioned by the different power of resistance of the infected individual. Recovery may occur in six, eight, or twelve weeks; or relapses at no precise intervals may occur and may drag on for years. The chronic relapsing form, however, seems to be rare. Four of Letzerich's cases belong to the acute, and two to the chronic, form.

Letzerich had his third attack of purpura in November, 1889. About three weeks before he had a feeling of weariness and heaviness in the limbs, with poor appetite and slight evening fever. There were at this time also hæmorrhages from the nose, throat, and gums. Diarrhœa then set in. The liver became much swollen and so did the spleen, while the skin assumed a pale-yellow color. It is noteworthy that with the occurrence of fresh petechiæ there was an itching sensation in those places where the petechiæ were about to form.

In the case of a boy, thirteen years old, the same symptoms occurred. The whole body, limbs, and trunk became strewed with petecheæ of various sizes. Upon the floor of the mouth, velum palati, and mucous membrane of the cheeks and throat were pretty large vibices. The liver dulness was more than double its normal dimensions. The spleen extended beyond the edge of the ribs and felt hard. There were slight evening fever and slight hæmorrhages from the bowel after the diarrhœa had lasted some days. The acute swelling of the spleen and liver subsided quickly.

In Letzerich's third attack, at the beginning, rodlets and bacilli of different lengths, some with spores, were found between numerous scattered blood-cells and some young epithelium and cells from the rete Malpighii. Free spores and single bacilli were to be found in large quantities in the field of the microscope. Three weeks later the fresh petechiæ were paler in color, smaller, and generally round in shape. The rodlets were much fewer, so also were the constricted bacili. Free spores could only be seen in scattered positions. After a further period of ten to fourteen days only a few rodlets were to be found, and they did not take the stain as well. Spores could be found only here and there. After a further interval of fourteen days rodlets had entirely disappeared, and only single groups of dull bacilli and individual spores were found. Letzerich thinks that the bacilli take the stain in its full intensity only when they are living, and hence this fact may be used to determine the vitality of the organisms.

As regards treatment, he speaks highly of a 4- or 5-per-cent. solution of antipyrine for local use to check hæmorrhage. The chief factor in recovery is the maintenance of absolute rest for a long time. Too early rising predisposes to relapses. The patient must be well nourished with eggs, broths, milk, and wine. Iron and quinine are valuable drugs. Letzerich expresses great confidence in the utility of benzoate of soda in all infectious diseases.—*Zeitschrift für klinische Medicin*, Bd. lxxx. Hefte 5, 6.

SOCIETY PROCEEDINGS.

THE AMERICAN MEDICAL ASSOCIATION.

Forty-second Annual Meeting, held at Washington, D. C., May 5, 6, 7, 8, 1891.

[Continued from p. 567.]

FOURTH DAY—GENERAL SESSION.

SECTION OF SURGERY AND ANATOMY.

The first paper was read by EDMUND ANDREWS, M.D., LL.D., Professor of Clinical Surgery in Chicago Medical College, on "Cadaver Studies on the Removal of the Semilunar Ganglion Through the Floor of the Cranium."

Dr. Andrews began by pointing out the severity and obstinacy of many of the cases of facial neuralgia, as well as the frequency of relapses following stretching and excision of the nerve. He has several times relieved this painful affection temporarily by simply loosening the old stump or cicatrix in a case which had previously had a neurectomy performed.

The author believes the origin of the neuralgia is a peripheral irritation, perhaps of a dental nerve; this causes a neuritis which travels upward until the semilunar ganglion is reached. Therefore, stretching or excision, without interfering with this ganglion, is usually not followed by permanent benefit. Following up this idea, about one year ago Dr. Andrews began an investigation upon the cadaver, looking toward a practical means of removing the semilunar ganglion in the human being for the relief of neuralgia of the trifacial nerve. While pursuing these studies he saw an account of this operation as having been performed by Dr. Rose, of London, in November of last year. This seems to be the first time this operation has been done. In this case all the pain seemed to be in the superior maxillary bone of one side, and, yielding to the request of the patient, this was removed, which gave ready access to the foramen ovale. A trephine was applied at this point, and the ganglion removed without difficulty. At the end of three or four months there had been no return of pain, but the eye on this side became inflamed, and was removed to avoid sympathetic inflammation of the other. It was thought that this was due to injury at the time of the operation.

In January of the present year Professor Rose did a second operation. This time an H-shaped incision was made over the zygomatic arch. The zygoma was sawed through at either end, and turned down with the lower flap. The coronoid process of the inferior maxillary bone was likewise sawed through and turned up with the upper flap. In this way the foramen ovale was again exposed, and the operation continued as before. After the operation is concluded, the coronoid process and the zygoma are wired in their places.

Professor Andrews has worked out four other methods for performing this operation, of which he considers the following the best: The H-shaped incision is made, and flaps, including the zygoma and coronoid process, as in Professor Rose's second operation. Some fibres of the masseter muscle are then snipped, and the origin of the internal pterygoid muscle is dissected off. The inferior dental and gustatory branches of the inferior maxillary nerve are thus reached, which guide the operator to the foramen ovale. The trephine is then applied to the edge of the foramen, and the ganglion which is on the anterior portion of the petrous portion of the temporal bone is reached. The dura mater and nerve are now peeled from the skull. Dissect to inner side with scalpel or scissors. The superior maxillary branch is now cut off, and the ganglion dissected from the dura lying between it and the convolutions. This is rather difficult, as it is very adherent to the dura. The dissection may be facilitated by making traction on the inferior dental and gustatory nerves. The wound is closed as advised by Professor Rose.

DR. LAWRENCE TURNBULL, of Philadelphia, then read a paper "On the Deaths from Chloroform and Ether since the Hyderabad Commission, with Conclusions Drawn from Them."

The whole number of deaths which he was able to collect was forty-three. Of these, thirty-nine were from chloroform, and four from ether. An analysis of the deaths due to chloroform showed that death occurred from syncope in five cases; in thirteen the heart stopped first; in ten the respiration failed first; in four the heart and respiration seemed to cease simultaneously; and in twelve cases the mode of death is not stated. The cases above alluded to, added to the three hundred and seventy-five cases collected by Wood, in a paper read at the Medical Congress held in Berlin last year, make four hundred and fourteen reported cases of death from chloroform to the present time.

Considering the fact that either anæsthetic does not always prove fatal in a uniform manner, Dr. Turnbull concludes that in the use of either chloroform or ether, the most careful attention to the pulse and respiration is necessary.

In the discussion Dr. Hunter Maguire said he did not consider chloroform more dangerous than ether, but thought that each anæsthetic had its uses, and one or the other should be selected according to the case. He believes chloroform the safer in organic heart disease, or if there is renal or bronchial trouble, and he does not hesitate to give it in these cases. On the other hand, he would give ether in cases of fatty heart. In over 14,000 administrations of chloroform he has known of but one death, and that was due to fright from rapid anæsthesia, owing to being in too great haste. He insists upon the necessity of administering chloroform slowly.

Dr. Hearn, of Philadelphia, believes that the secret in giving chloroform is to give it slowly.

DR. W. W. KEEN, of Philadelphia, read a very interesting paper on "Linear Craniotomy (miscalled Craniectomy) for Microcephalus."

He began by defining the operation, which is really a long incision in the skull, and objects to the term "craniectomy," as the termination *-ectomy* implies removal of the part.

In addition to his own cases, Dr. Keen has been able to collect eight cases in all, including two cases in which trephining was done for the same condition.

In Dr. Keen's operation an incision is begun in the scalp at the frontal eminence, and carried backward parallel with the sagittal suture, across the lambdoidal suture. By means of a trephine and specially adapted cutting forceps, a narrow strip of the skull is removed, corresponding with this incision.

Wyeth did two such linear craniotomies, one on either side of the sagittal suture, removing a strip of skull one-fourth of an inch in width, then by inserting the tips of the fingers against the outer edge of the wound thus made the skull is forcibly separated until the width of the incision in the skull measures one to one and a half inches.

Dr. Keen thinks that double craniotomy increases the risk in the operation considerably, and does not better attain the object of the operation.

Of the eight cases reported two died, one, one and one-half hours after the operation, of heart failure; the other, three and one-half hours after operation, of acute anæmia. In four of the cases the improvement in the mental as well as general condition, after operation, was very marked. One case was reported too soon to judge of the result. So far as the reports go, the result appears to be as good after trephining as after craniotomy, but the author thinks the latter the more logical operation.

DR. B. MERRILL RICKETTS, of Cincinnati, Ohio, followed with a paper on "Exploratory Incisions in Cases of Fracture of Bones, where Doubt Exists as to their Character, with Report of Observations on the Lower Animals."

After detailing some experiments on the lower animals, he advocated the replacing of all fragments of bone in cases of compound fracture, and believes that if the periosteum be made to overlie them, union will take place. He favors cutting down on fractures when doubt exists, and then wiring the fragments.

A paper on "Sprains of the Ankle" was then read by DR. W. R. TOWNSEND, of New York.

Attention was called to the unfortunate results so frequently following badly treated sprains of the ankle-joint; the most common of these being flat-foot. The author advises the Catterell dressing, which is applied as follows: The limb is elevated to reduce swelling; straps of adhesive plaster are then applied over the affected part, just as is advised in chronic ulcer of the leg, and a pressure bandage is then applied. The patient is allowed to use the foot as before. In cases of more severe sprain a plaster-of-Paris bandage is applied over this for a few days, being careful to remove the plaster-of-Paris dressing soon, to allow of motion. Massage is useful after the acute stage has passed.

DR. JOHN A. WYETH, of New York, then read a paper on "Supra-pubic Cystotomy."

He reported twenty-three operations performed by himself, all of which recovered. He considered the preparation for and the details of the operation. The abdominal wound is treated by the open method. If the bladder is perfectly healthy and has suffered no violence, the wound may be closed; otherwise, this is also allowed to close by granulations. Dr. Wyeth is deeply impressed with the safety and advantage of this operation, and believes it should succeed all other methods of cutting into the bladder.

In the discussion, Dr. McGuire said he had performed this operation twenty-nine times, and preferred it to any other method, where it was necessary to do cystotomy for any cause.

Dr. W. W. Keen, of Philadelphia, and Dr. W. E. B. Davis, of Birmingham, Alabama, also spoke very highly of this operation.

The last paper read was by DR. ROBERT NEWMAN, of New York, on "Platinum Needles for Electrolysis."

The theory of electrolysis was first considered, and then the essentials of a good needle. Platinum was found by all odds to be the best substance of which to make these needles, the only objection to it being its great ductility, which causes the needle to bend from the force necessary to introduce it into the tissues. Dr. Newman, therefore, devised a spear-pointed grooved needle, which was first thrust into the tissues, the platinum needle being inserted along the groove. The first needle was then withdrawn. This plan seemed to him to leave nothing to be desired.

Owing to a misunderstanding a session had been arranged for Friday afternoon, May 8th, but as the delegates were anxious to return to their homes, the papers on the list for that day were read by title, and referred to the Committee on Publication.

The following officers were elected for the next year:

Chairman.—J. McF. Gaston, M.D., Atlanta, Ga.

Vice-Chairman.—Mordecai Price, M.D., Philadelphia.

Secretary.—F. W. Mann, M.D., Detroit, Mich.

The section then adjourned.

FIFTH FRENCH CONGRESS OF SURGERY.[1]

(Continued from page 505.)

THE second question which had been placed before the members of the Congress for discussion was: "What are the After-results of the Extirpation of the Uterine Appendages in the Non-neoplasmic Affections of these Organs?"

SIR SPENCER WELLS, of London, opened the subject by saying that he continued to be very favorable to the operation, which had proven to be of great service to many suffering women, still he thought that oöphorectomy was too easily resorted to; and he thinks that if indications are very frequent for neoplasms, they are and ought to be rare for non-neoplasmic affections of the ovaries. Certain kinds of salpingitis can be cured without an operation, and certain women operated upon for metrorrhagia very often, if they do not die as a result of the operation, keep on suffering and even have menorrhagia.

MR. LAWSON TAIT next spoke, saying that extirpation of the uterine appendages gives excellent operative results, his death-rate being only 3 per cent. To be able to study the after-effects of extirpation of the uterine appendages, Mr. Lawson Tait divides his patients into three classes: The first one contains ovarian castrations for uterine diseases, especially for fibro-myoma; in the second are placed castrations for inflammatory lesions of the appendages; finally, a third class, in which enter extirpation of the appendages for nervous symptoms having a relation to uterine or menstrual troubles.

He has performed 271 ovarian castrations for fibro-myoma, and finds that these give him the best results. Out of 265 operations, 8 have not given satisfactory results, and the patients had to be subjected to a hysterectomy; while in 257 cases there was a complete cure, the tumor having either diminished or the pains having completely disappeared.

[1] Held in Paris from March 31 to April 4, 1891.

The influence of age in regard to results is important; before the age of forty 70 per cent. of the tumors disappear completely; between forty and fifty the tumors disappear less easily, but diminish from one-third to one-sixth their previous size. He does not think that the menopause cures those tumors or diminishes the bad symptoms produced.

He thinks that it is a wrong statement to say that 10 per cent. of the castrations for uterine fibroid tumors bring on insanity. Out of all his operations, Mr. Tait has only observed one case of insanity, while, on the contrary, he has seen three well-marked cases of insanity cured by castration performed for fibromata.

In his second class, which comprises all the cases of salpingitis Mr. Tait is less affirmative; he thinks the operation in those cases is a difficult one, yet he does not admit that one should stop in the middle of such an operation; he always goes on, and destroys adhesions, no matter how firm; intestinal and uterine fistulæ have been the consequence, but he has always succeeded in curing them. As to the after-results, they are simple if the operation has not been a difficult one. The menstruation may not altogether cease, but almost all the other symptoms disappear.

In regard to his third class, that of castration for nervous symptoms, Mr. Tait thinks he has not operated early enough, as he has always waited until pushed to the extreme point by the patient, her physician, and family.

He thinks that in the future we ought to operate in those cases more often than is now done. He operated in 1881 on a young idiotic lady, who had been so afflicted since her birth; at each menstrual period she suffered from severe epileptic fits. Since the operation, the menstruation has disappeared and the fits have greatly diminished and her general health (not her idiotic condition, however) has been most favorably influenced.

Another interesting case was that of a young woman who became pregnant fifteen months after her marriage; one year later she presented well-pronounced signs of mania which appeared to be related to menstrual troubles; no treatment did any good; she was prevented in time, one day, from killing her child. He was asked to operate, but refused; finally, eight months later, she was operated upon, which resulted in her complete recovery.

DR. JACOBS, of Brussels, from 1888 to this time has operated on 58 patients, 9 of which operations were for unilateral disease of the appendages, and he has collected 54 operative cases. Out of 7 operations for bilateral suppurative salpingitis all are now in excellent health, although 3 of them complain of occasional abdominal pains every month. One of the two unilateral suppurative salpingitis cases became pregnant since the operation and had a normal pregnancy; 23 were operated upon for catarrhal salpingitis, 19 being bilateral. These are all cured or greatly relieved except one, who suffers more to-day than she did before the operation. Three cases of hæmato-salpingitis gave him excellent results. His conclusions as regard distant results are: 1st. That they are very favorable in cases of suppuration of the appendages. 2d. In catarrhal affections, especially those of small volume, they are less favorable; while in nervous women castration is rarely of any benefit.

PROF. LE DENTU, of Paris, operated 34 times with one death from septic peritonitis, the ligature of the uterine stump having ruptured. Three cases showed unfavorable results; in one, one of the ovaries removed being tuberculous, the lesion has become generalized; in one there remains a fistula, while in a third there was a stercoral abscess.

As to the nature of the after-effects, some patients are completely cured, while others suffer for a limited time and others for an indefinite period. The causes of these variations are numerous. Nervous patients suffer much longer than others; again, adhesions which had been destroyed during the operation, reform, or a continuous metritis plays an important *rôle*. One of his patients, upon whom he had performed two laparotomies and one curetting, was only cured after an abdominal hysterectomy.

Dr. Le Dentu called attention to a peculiar after-result of extirpation of the appendages. A woman, operated upon in 1888, returned in 1890 suffering from violent pains of the left side, extending on that side up to the face; on digital examination a small tumor was found in the left vaginal cul-de-sac. Uterine dilatation was performed, and on the twelfth day she evacuated a large quantity of black liquid; since then the tumor and pain have disappeared. In another case, after removal of the appendages, the patient did not seem to recover as desired, and only did so after an extensive effusion of liquid through the vagina. He found in another patient operated on some time ago, two small cysts, one on the right, the other on the left side. These secondary cysts are probably, according to the speaker, the remains of a small portion of the tube which was not well removed.

DR. TERRILLON has performed 140 operations for removal of the uterine appendages: 82 for catarrhal parenchymatous salpingitis; 36 for purulent salpingitis (ovarian or tubal); 10 for hæmo-salpingitis; 8 for tubercular lesions, and 4 for hydrosalpinx, but he only presents the after-results of his first 90 cases, the series of which ended last August. Of these 90 operations he has had 4 deaths, 74 absolute cures, and 12 cures with a few disagreeable symptoms, such as painful menstruation or vesical pain. Out of his 50 operations performed since August, he has had five deaths.

Dr. Terrillon has also observed a peculiar complication in three cases: In the first, a woman was operated upon for double catarrhal salpingitis; she returned three months after the operation suffering severely from abdominal pain. Her temperature was 40° C., and she presented on the left side of the abdomen a painful tumor; by aspiration 324 grammes of a yellowish serous liquid were evacuated, the analysis of which indicated the presence of albumin and fibrin, but no pus or microbes.

In December last, a second patient, operated upon for double salpingitis, returned to the hospital, two weeks after having left it, with the same phenomena as the preceding case; aspiration gave 300 grammes of liquid of the same color as in the previous case.

Finally, last week, a patient, operated upon by Péan's method presented in a vaginal cul-de-sac 575 grammes of the same liquid.

PROF. BOUILLY, of Paris, said that the after-results are favorable when one has to deal with salpingitis, or

painful ovaritis; but such is not the case with interstitial catarrhal salpingitis, which demands a long and tedious operation. As to interference for nervous phenomena, he does not advise it. He has a series of 90 cases, and divides the unsuccessful into three groups: 1st, recurring pelvi-peritonitis; 2d, painful cases; 3d, secreting fistula. Out of his 70 patients he has had 9 more or less deferred troubles, twice severe peritonitis and abscess, with recovery; 3 cases of persistent pain; 3 cases of mucopurulent discharges, which, however, disappeared after curetting the uterus; and in one case persistent metrorrhagia.

DR. L. P. RICHELOT, of Paris, has performed a total of 240 laparotomies since January, 1880, and has operated 170 times for removal of the uterine appendages for non-neoplasmic affections. Of this number, about 150 have been kept under observation. He divides his cases into eight groups, the first one comprising simple salpingo-ovaritis or parovaritis; in these cases, of course, the after-results will certainly be favorable, but one must be careful not to remove the uterine appendages uselessly.

In the second group he places ovaries with small cysts. The author had thirty patients, out of which the majority were rapidly cured, while about ten had a period of "therapeutical hesitancy," during which they did not admit they were well.

In the third group is chronic parenchymatous and adherent salpingitis and hydrosalpinx; patients of this group, who have suffered so much, all improve.

In a fourth group he places salpingo-ovaritis which is complicated by a movable or adherent retroversion.

In these cases he has always seen the uterus return to its normal situation by the pediculization of the appendages of the uterus.

The fifth group comprises hæmato-salpingitis and the hæmatoceles. Out of twelve patients, with the exception of two cases of hæmato-salpingitis complicated with strong and solid adhesions, all improved rapidly.

In a sixth group he places pyosalpingitis and suppurative ovaritis; this group gives the most satisfactory results. Out of 27 cases 15 were cured absolutely; of the remaining patients, there are several nervous patients who have complained of pains and menstrual troubles, although the pelvic organs became normal.

In the seventh group are the cases of uterine fibroma; the results have been very satisfactory, suppression of the pains and menstruation and sometimes atrophy of the tumor resulting.

In the eighth group we have neuralgia and true hysteria, and in this group he only includes fixed and violent neuralgias having their seat in perfectly normal organs. The cases referred to were as follows: A patient had a fixed, persistent, and very acute pain on the left side, which encouraged the author to perform unilateral castration, which was immediately followed by a disappearance of the neuralgia. Another patient had been suffering for five years with violent pains localized in the left side; removal of the corresponding ovary brought on an immediate cure. A third patient had been curretted, and the round ligaments had been shortened, yet, as she continued to suffer, the uterus and appendages, which were all normal, were removed and found perfectly healthy. Finally, a case of true hysteria, without any pain or ovarian lesions, was modified by castration.

DR. SÉGOND, of Paris, was opposed to the distant results obtained by extirpation of the appendages through laparotomy. The results arrived at immediately by vaginal hysterectomy, applied to these same troubles. During the past two years he has performed 18 laparotomies for diseases of the appendages, and has had 17 operative cures and 1 failure; 5 radical cures, 2 for pyosalpingitis, 3 for non-suppurative lesions; 7 have been largely benefited by the operation but still suffer a little; finally, 5 have been operated upon, 4 for pyosalpingitis and 1 for a non-suppurating lesion, but all have suffered more or less since the operation; 2 of these patients present severe metrorrhagia, while 3 others present purulent discharges for which curretting and other treatment has proven fruitless. Moreover, 3 of these patients who had been carefully sutured have presented ventral hernias which are most troublesome.

On the other hand, Dr. Ségond has performed during that period 17 hysterectomies. All these patients are marvellously well, except one woman who had been operated upon by laparotomy before and who still continues to suffer.

DR. ROUTIER, of Paris, has removed, since 1887, the appendages 52 times: 27 were for pyosalpingitis; 4 tuberculous; 7 hydrosalpinx; 7 hæmato-salpinx; 11 interstitial salpingo-ovaritis. The results have been excellent in the great majority of these cases. Several of them have presented at the time of their first periods intense congestion of the face, dragging-down pains and felt miserable. As to the after-results, menstruation has been suppressed every time when the operation was not a complicated one, and, therefore, no danger was present of leaving fragments of the ovary in the abdomen. The abdomen is, as a rule, painless after the operation; still there are patients who have suffered from a heavy feeling in the abdomen, flushing, etc., at the menstrual periods; not more than half of those operated upon present these manifestations. Uterine atrophy is constant, the organ becoming infantile. In a word, removal of the appendages gives excellent results in cases of pyosalpingitis; in other cases, as of hydrosalpinx, hæmato-salpinx, interstitial salpingitis, ovarian cysts, the results are also good, but this surgeon finds that the suppression of menstruation in certain young people is followed by a state of uncertain health.

DR. BAZY has also removed the appendages in two hysterical persons. In one case, the hysteria was a grave one, the patient suffering very much in the abdomen; all internal remedies having failed, the operation was resorted to and the surgeon found the ovaries and tubes fixed to the pelvic walls; the uterus was partly detached as well as the adhesions, and the immediate results proved to be very good, but later the pains recurred.

DR. DOYEN, of Rheims, has performed 56 operations for removal of the appendages for troubles other than ovarian cysts or cancer.

Thirty-two laparotomies have given 2 operative deaths and 3 negative results, one suffering from double fistulous purulent salpingitis, the other two being extreme cases of hysteria. Seven continued to suffer with abdominal dragging-down pains, neuralgia, and gastric

crisis; three of these last improved under appropriate treatment, a fourth was operated upon to obtain hysteropexia, two others required vaginal hysterectomy.

The 20 satisfactory results comprise 13 double-tube ovarian castrations and 7 incomplete operations, 4 of which were done to destroy pelvic adhesions and reduce the retroverted uterus.

Since 1887, he has performed 20 vaginal hysterectomies for non-neoplasmic diseases of the appendage, with only one death. The therapeutic results of these operations are most remarkable; only one of his cases had a temporary cure, as in this case after evacuation of the hæmato-salpinx the uterus was replaced in its former position. A simple laparotomy with destruction of the peri-uterine adhesions soon brought about a definite cure.

The later results of these 56 operations demonstrated that total castration, that is, vaginal hysterectomy followed by removal of the appendages, is the operation which gives the most satisfactory results. Dr. Doyen performs it whenever the uterus is painful and displaced and requires removal; but he finds that in a good many cases castration is excessive, and a simple laparotomy would be all that is necessary. Cases should be selected.

CORRESPONDENCE.

ST. LOUIS.

The objections to a Three-course requirement.—The advantages of the Examining Board.

To the Editor of THE MEDICAL NEWS,

SIR: The objections to a three-course requirement which was championed by Dr. Todd in THE MEDICAL NEWS of May 2d, 1891, are as follows:

1. It possesses an erroneous basis, viz.: the standard of time and not of knowledge.

2. It is unfair in that it takes no cognizance of the superior intellectuality and industry of students.

3. It allows no credit for previous work and study, no matter how extensive, unless pursued regularly in a recognized medical school.

4. It is unjust because it works hardship upon deserving young men who happen to be poor in worldly goods; the rich are thus given the advantage and preference.

5. It perhaps would encourage laxness amongst teachers and indifference amongst students.

6. The ends would not be accomplished, because second-class colleges would exist under its enforcement just as well as now, and they would be equally well patronized.

The advantages of the examining board are:

1. It possesses a just and rational basis, that of knowledge.

2. Every student would perforce depend upon his own efforts and zeal, and would not be indifferent to his studies unless he was not anxious to practise.

3. It is impartial—the rich have no advantage over the poor.

4. The licensing power being taken away from the medical colleges, their instruction, by the sheer force of competition, would be the drawing card, for students would go where they could learn most, rather than where they could most easily graduate.

5. Second-class colleges (and by this I mean those characterized by loose management and incompetent instruction) would be forced out of existence, because so many of their graduates would be rejected by the various State Boards.

In conclusion, let me re-state a remark that I have already made, to the effect that it will be easy to convince the legislators of the wisdom of this measure; it is so thoroughly in keeping with fairness and right that to the law-makers it so smacks of the very essence of all law, that they advocate it in preference to all other measures.

Then let the right prevail; relieve the boards of health of the annoying duty of censors of the medical profession, and dictators of medical colleges; let the State's money be expended—not for the compilation of statistics, their publication and circulation, articles of value to the doctors alone—but for the prime object of such a board—the hygiene of the State; let the impartial board of examiners pass on every new graduate who seeks the privilege of practising in the State.

In such a commonwealth the law of medicine will be the law of fairness, democracy and right, and the licensed doctor will lie more comfortably on the bed of roses nurtured by his own industry, while the incompetent one will seek some more congenial occupation.

Three results will obtain:

1. An ever-increasing number of good, competent, and worthy doctors.

2. An ever-decreasing number of unworthy, unprofessional, and incompetent physicians.

3. Medical colleges upon a higher, better, and more intelligent plane.

Yours truly, YOUNG J. BOND.

GRAND AND PAGE AVES.

NEWS ITEMS.

Beri-beri in a College.—At Rangoon, Burmah, there exists a theological training school or seminary for the native tribe called the Karens. The students of this institution have been for thirteen years seriously afflicted by beri-beri. The sickness has several times been so general as to threaten to break up the school. Various sanitary alterations in the buildings have been tried in the hope of ridding the place of the local causes of the disease, but without success. The measure about to be adopted will be the abandonment of the old buildings in Rangoon and the construction of new ones at a site where more space can be had, about nine miles above the city. The gradual removal of the college to that point is at present in progess. The attendance of students in 1890 was seventy-six; of these eighteen, or twenty-three per cent., were attacked by beri-beri, and were compelled temporarily or permanently to leave college.

A New Jersey Health Case.—A decision by the Recorder of Hudson County, New Jersey, in a certain Health Board prosecution is worthy of note. The complaint was in reference to noisy crowing roosters, alleged to be a detriment to the health of a neighborhood by

reason of the production of insomnia, a ground of complaint common to the experience of nearly all Boards of Health. After an attentive hearing of the counsel for both sides the Recorder gave his decision adversely to the Board of Health on the ground that "a rooster is not an animal in a legal sense." The counsel of the Board gave notice that he would appeal the case.

Outside Physicians to Admit Patients to the Philadelphia Polyclinic Hospital.—As an evidence of the liberal spirit with which the Philadelphia Polyclinic Hospital is managed, it has been decided that the full privileges of the wards, private rooms and suite of operating rooms may be extended by any member of the staff to physicians not connected with the institution.

Many physicians who are not attached to hospitals have frequently cases that they would like to have under the auspices of a hospital with its resident physicians, trained nurses, and sanitary *régime*, and yet wish them under their own observation.

Patients thus admitted to this hospital are attended by the physician for whom the case is admitted as fully as though he were a member of the staff. The admission blanks must invariably be signed by a member of the staff, who thereby assumes the responsibility for the acts of the physician, after which arrangements and terms may be made with the matron.

Visitors are cordially invited to visit and inspect the hospital, on Lombard Street west of Eighteenth, on Mondays from 3 to 4 P. M.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 5 TO MAY 18, 1891.

By direction of the Acting Secretary of War, Par. 5, S. O. 24, January 29, 1891, from this office, granting JULIUS H. PATZKI, *Major and Surgeon*, six months' leave of absence, is so amended as to grant said leave on surgeon's certificate of disability.—Par. 15, *S. O. 99, A. G. O.*, May 1, 1891.

KENDALL, WILLIAM P., *Captain and Assistant Surgeon.*—Is relieved from duty at Fort D. A. Russell, Wyoming Territory, and will report in person to the commanding officer Fort Douglass, Utah Territory, for duty at that post.—Par. 14, *S. O. 102, A. G. O.*, May 5, 1891.

MCCAW, WALTER D., *Captain and Assistant Surgeon.*—Is relieved from duty at Fort McPherson, Ga., and will report in person to the commanding officer Camp Pilot Butte, Wyoming Territory, for duty at that post, relieving George E. Bushnell, Captain and Assistant Surgeon. Captain Bushnell, on being relieved by Captain McCaw, will report in person to the commanding officer Fort McKinney, Wyoming Territory, for duty at that post.—Par. 14, *S. O. 102, A. G. O.*, May 5, 1891.

EDIE, GUY L., *Captain and Assistant Surgeon.*—Is relieved from duty at Fort Douglass, Utah Territory, and will report in person to the commanding officer Fort Niobrara, Nebraska, for duty at that post, relieving Timothy E. Wilcox, Major and Surgeon. Major Wilcox, on being relieved by Captain Edie, will report in person to the commanding officer Fort Huachuca, Arizona Territory, for duty at that post.—Par. 14, *S. O. 102, A. G. O.*, May 5, 1891.

GIRARD, JOSEPH B., *Major and Surgeon.*—Is relieved from duty at Alcatraz Island, Cal., and will report in person to the commanding officer Benicia Barracks, Cal., for duty as Post Surgeon at that post, and Attending Surgeon at Benicia Arsenal, Cal., relieving John H. Janeway, Major and Surgeon. Major Janeway, on being relieved by Major Girard, will repair to Philadelphia, Pa., and assume the duties of Attending Surgeon and of Examiner of Recruits in that city, and, in addition to his duties in Philadelphia, will perform the duties of Post Surgeon, Frankford Arsenal, Pa.—Par. 14, *S. O. 102, A. G. O.*, May 5, 1891.

CABELL, JULIAN M., *First Lieutenant and Assistant Surgeon.*—Is relieved from duty at Fort Niobrara, Nebraska, and will report in person to the commanding officer Fort Buford, North Dakota, for duty at that post, relieving Valery Havard, Major and Surgeon. Major Havard, on being relieved by Lieutenant Cabell, will report in person to the commanding officer Fort D. A. Russell, Wyoming Territory, for duty at that post.—Par. 14, *S. O. 102, A. G. O.*, May 5, 1891.

LA GARDE, LOUIS A., *Captain and Assistant Surgeon.*—Is relieved from duty at Fort Assinniboine, Montana, and will report in person to the commanding officer Fort McHenry, Md., for duty at that post, relieving Charles B. Byrne, Major and Surgeon. Major Byrne, on being relieved by Captain La Garde, will report in person to the commanding officer Fort Assinniboine, Montana, for duty at that post.—Par. 14, *S. O. 102, A. G. O.*, May 5, 1891.

CLARKE, JOSEPH T., *First Lieutenant and Assistant Surgeon.*—Is relieved from duty at Fort Riley, Kansas, and will report in person to the commanding officer Camp Poplar River, Montana, for duty at that post, relieving Jefferson D. Poindexter, First Lieutenant and Assistant Surgeon. Lieutenant Poindexter, on being relieved by Lieutenant Clarke, will report in person to the commanding officer Fort Niobrara, Nebraska, for duty at that post.—Par. 14, *S. O. 102, A. G. O.*, May 5, 1891.

By direction of the Acting Secretary of War, DALLAS BACHE, *Lieutenant-Colonel and Surgeon*, is relieved from duty as a member of the Army Medical Examining Board, New York City, and will return to his proper station, Omaha, Neb., and resume his duties as Medical Director Department of the Platte.—Par. 5, *S. O. 108, A. G. O.*, May 12, 1891.

By direction of the Acting Secretary of War, the extension of the ordinary leave of absence granted HENRY P. BIRMINGHAM, *Captain and Assistant Surgeon*, in S. O. 81, A. G. O., April 10, 1891, from this office, is changed to leave of absence on account of sickness, to date from May 1, 1891.—Par. 4, *S. O. 108, A. G. O.*, May 12, 1891.

MCKEE, JAMES C., *Lieutenant-Colonel and Surgeon.*—Having been found incapacitated for active service by an Army Retiring Board, is, by direction of the Acting Secretary of War, granted leave of absence until further orders, on account of disability.—Par. 11, *S. O. 106, A. G. O., Washington, D. C.*, May 9, 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 16, 1891.

RUSH, W. H., *Passed Assistant Surgeon.*—Detached from the "Saratoga," and prepare for sea.

ATLEE, S. W., *Passed Assistant Surgeon.*—Detached from Navy Yard, League Island, and ordered to the "Saratoga."

BRONNELL, C. DE W., *Assistant Surgeon.*—Ordered to Navy Yard, League Island, Pa.

STREETS, T. H., *Surgeon.*—Detached from Naval Examining Board, and prepare for sea.

MACKIE, B. S., *Surgeon.*—Ordered as member of Naval Examining Board.

CURTIS, L. W., *Passed Assistant Surgeon.*—Detached from Naval Academy, and ordered to the Practice-ship "Constellation."

LEACH, PHILIP, *Passed Assistant Surgeon.*—Orders to the U. S. Practice-ship "Constellation" revoked.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication, or 250 reprints will be furnished instead of payment, provided request for reprints be noted by author at top of manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

Address the Editor: H. A. HARE, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

Subscription Price, Including Postage in North America.

PER ANNUM, IN ADVANCE . . . . . $4.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
NOS. 706 & 708 SANSOM STREET,
PHILADELPHIA.